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MATERIA MEDICA
FOR NURSES

GROFF

MATERIA MEDICA

FOR NURSES

With an Epitome of Official Drugs, Preparations and Chemicals, giving their Medicinal Uses and Doses; and Questions for Self-Examination

BY

JOHN E. GROFF, Ph. G.

APOTHECARY IN THE RHODE ISLAND HOSPITAL; PROFESSOR OF MATERIA MEDICA IN THE RHODE ISLAND COLLEGE OF PHARMACY.

FOURTH REVISED EDITION

Rearranged by

LUCY C. AYERS

SUPERINTENDENT OF NURSES TRAINING SCHOOL, RHODE ISLAND HOSPITAL.

Sections on Therapeutics Rewritten by

HERMAN C. PITTS, M. D.

GYNECOLOGICAL SURGEON, RHODE ISLAND HOSPITAL.

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PREFACE TO FOURTH EDITION.

In this fourth edition, the author has endeavored, with the assistance of his collaborators, to present the subject so as to meet the needs of both the nurse in training, and the graduated nurse; to offer a text-book, for use in the school, and at the same time a book for reference after graduation.

The arrangement of subjects is according to the ideas of Miss L. C. Ayers, Superintendent of Nurses Training School, Rhode Island Hospital, and is with reference to the needs of the nurse from the time she enters a training school until she graduates.

The chapters relating to weights and measures, official preparations, and chemistry are intended for the probationary term; therapeutics for the senior term.

In previous editions, the chapters on therapeutics were collated by the author, from recognized authorities; but believing the trained and experienced physician to be the only one capable of presenting that subject as it should be presented, it was placed in the hands of Dr. H. C. Pitts, one of the Surgeons to the Rhode Island Hospital who has rewritten it, and he has done so, with especial reference to the needs of the nurse.

In the first edition there was an epitome of the Pharmacopœia. It was omitted in the succeeding editions. But at the suggestion of Miss Ayers, who regards it as valuable for reference, it has been made to include the subjects of both the seventh and eighth revisions of the Pharmacopœia and replaced at the end of the volume.

In rewriting and rearranging the book, the whole text has been carefully read and revised and the entire subject, being more clearly stated and more logically arranged, will, it is hoped, be even more easily mastered than it has been before.

JOHN E. GROFF, PH. G.

PROVIDENCE, R. I.,
April 4, 1908.

TO MY WIFE AND DAUGHTER,
JOINT SHARERS
IN ALL MY
INTERESTS, EXPERIENCES, HOPES, JOYS AND SORROWS,
THIS VOLUME IS
AFFECTIONATELY DEDICATED.

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Materia Medica

For Nurses

CHAPTER I.

INTRODUCTORY.

Materia Medica is that branch of the study of medicine which treats of the substances and means used in curing diseases.

The nurse must, in order to afford the intelligent aid to the physician which is expected of her, possess some knowledge of drugs, their preparations and doses, the chief purposes for which they are used and their prominent physiological action.

As she is required to do considerable measuring in the practice of her profession, she should be familiar with the systems of weight and measure, now in use, and be able, if called upon to do so, to convert one system into the other. She should know the meaning of therapeutic terms and the poisons, their poisonous symptoms and antidotes.

The following pages, thoroughly revised and carefully rewritten, have been arranged to enable the nurse to acquire this

knowledge a little more easily than she could from the larger works upon the same subject. Its accomplishment requires close application and much memorizing. But as the profession requires women of a high order of intelligence, it is believed they will find no insurmountable difficulties in mastering the subject of materia medica, as it is put forth in these pages.

CHAPTER II.

WEIGHTS AND MEASURES.

THERE are several systems of both liquid and solid measure, in use.

There are at present two systems in use for weighing medicines, viz.: the avoirdupois and the apothecaries weight.

The avoirdupois weight is used by all buyers and sellers.

The apothecaries weight is used solely in weighing drugs for mixing for medicinal use.

The unit of both systems is the grain, represented by the sign gr., which is the abbreviated word. The nurse, in common with all people, is familiar with the ounce, pound and fractional parts of the pound of the avoirdupois weight, and it needs no comment.

The apothecaries weight is not so familiar and will be considered first.

The first multiple above the grain is the scruple.

The scruple (℈) weighs twenty grains and the sign for it is an arbitrary one.

The dram (ʒ) weighs sixty grains.

The ounce (℥) weighs 480 grains.

The scruple, weighing 20 grains, is $\frac{1}{3}$ the weight of the dram and $\frac{1}{24}$ the weight of the ounce. The dram, weighing 60 grains, is $\frac{1}{8}$ the weight of the ounce.

The table therefore is:

20 gr. make one scruple (℈).

3 scruples make one dram (ʒ).

8 drams make one ounce (℥).

The Roman numerals are commonly used to designate the

number of gr., ℥ or ℨ to be used, and they follow the signs, thus: gr. i, ℈ ii, ℥ iii, ℨ iv.

The abbreviation f placed before the signs ℥ and ℨ indicate that *fluid* drams and *fluid* ounces are to be *measured*, not weighed.

Fluid measure:

The minim or standardized drop is the unit of the liquid measure, the sign being ♏.

Next higher comes the fluid dram (f ℥) of 60 minims.

Next the fluid ounce (f ℨ) of 8 fluid drams or 480 minims.

(Although the gill is not a part of this system, it is sometimes used and measures four fluid ounces.)

The pint, of 16 fluid ounces, is represented by the sign O, standing for octavus or ⅛, in allusion to the fact that a pint is ⅛ of a gallon.

The quart, measuring two pints or 32 fluid ounces, represented by the sign qt., the abbreviated Latin word quartuus meaning the quarter part of a gallon. The gallon, measuring four quarts or eight pints, or 128 fluid ounces. The sign cong., being the abbreviated Latin word congius, meaning gallon.

It should be borne in mind that drops and minims are not the same. Drops vary according to the shape and nature of the surface of the container from which they are dropped. A drop of water is smaller than a drop of molasses, and larger than a drop of ether. A minim is *measured* and no matter what the liquid may be or the vessel from which it is poured, the size of the minim is the same.

To illustrate:

60 drops of water will measure . . . . . 60 ♏
50 drops of syrup of acacia will measure . . . . . 60 ♏
250 drops of chloroform will measure . . . . . 60 ♏

As a rule, where drops *must* be used, as in the absence of a minim measuring glass the following table may be used.

Aqueous fluids	1	drop	= 1 minim.
Alcoholic fluids	2	"	= 1 minim.
Chloroform or ether.	4	"	= 1 minim.

Or, to put more sharply,

Aqueous fluids	60	drops	= 60 minims.
Alcoholic fluids	120	"	= 60 minims.
Chloroform, or ether	240	"	= 60 minims.

APPROXIMATE MEASURES.

The commonly used household measures are:

One teaspoonful	equals about		f ℥i.
One dessertspoonful	"	"	f ℥ii.
One tablespoonful	"	"	f ℥iv.
One wine-glassful	"	"	f ℥ii.
One teacupful	"	"	f ℥iv.
One tumblerful	"	"	f ℥viii.

They must of necessity vary greatly and should not be used except under stress of circumstances. A good graduated glass measuring f ℥ii and another measuring 120 ♏ should form a part of every nurse's equipment.

The use of the measuring glass: While measuring medicine, the nurse should never allow herself to be disturbed, and her medicines should be carefully and accurately measured. The glass should always be carefully washed and wiped immediately after using.

On all properly made graduates, the lines marking the measurements of fluid drams and fluid ounces, run entirely around the grass. In using the glass, bring it to the level of the eye, and slowly pour in the fluid to be measured, until the surface of it is even with the line *all around* the glass. When you are about to measure a dose of medicine, look for your bottle, read its label and then reach for it. As you raise the glass to your eye, look at the label on the bottle again. Measure the medicine and as you return the bottle to its place, *again* read the label. Get into the habit of doing this and the chances of error

will be greatly lessened. If in measuring a medicine you get too much in the glass, measure it over again. And never let a mistake remain uncorrected or unreported.

QUESTIONS.

What are the names of the weights used in the apothecary table?

If a dram of Dover's Powder is divided into 12 powders, how many grains will there be in each powder?

How many 10 ♏ doses in f ℥ij?

Twelve powders, containing a scruple and a half of Sodium Bicarbonate in each powder, will require how many drams of Sod. Bicarb.?

How many teaspoonfuls in a tumblerful?

How many f ℥ in 16 f ℨ?

How many tablespoonful doses in a six ounce mixture?

In four fluid ounces, how many teaspoonfuls?

In 32 drams how many dessertspoonfuls?

What household measure would you use to measure f ℥j? f ℨij? Oj?

CHAPTER III.

THE FRENCH OR METRIC SYSTEM OF WEIGHT AND MEASURE.

THE unit of this system is the forty-millionth part of the earth's polar circumference. It approaches very closely in length our common yard measure and is called the metre from *metron*, a Greek word meaning measure.

The metre is divided into fractional lengths of tenths, hundredths and thousandths.

The tenth of a metre is called the *deci*-metre; the prefix deci meaning $\frac{1}{10}$.

The hundredth of a metre is called the *centi*-metre; the prefix centi meaning $\frac{1}{100}$.

The thousandth of a metre is called the *milli*-metre; the prefix milli meaning $\frac{1}{1000}$.

If $\frac{1}{10}$ of a metre is one decimetre, then ten decimetres must make one metre.

One one-hundredth of a metre being one centimetre, then 100 centimetres must make one metre.

One one-thousandth of a metre being one millimetre, 1,000 millimetres must make one metre.

The terms expressive of the multiples of the metric system are: Deka, Hecto, Kilo, and Myria.

Ten metres make one Dekametre; the prefix Deka meaning ten.

One hundred metres make one Hectometre; the prefix Hecto meaning one hundred.

One thousand metres make one Kilometre; the prefix Kilo meaning one thousand.

Ten thousand metres make one Myriametre; the prefix Myria meaning ten thousand.

It is seen that the measurements, both subdivisions and multiples, decrease and increase by tens.

From the measure of length, the metre, all other measures of capacity, weight and surface are obtained.

The origin of the unit of liquid measure may be explained thus:

A hollow cube is constructed $\frac{1}{10}$ of a metre or one decimetre in all of its dimensions of length, breadth and depth. This vessel is the unit of liquid measure and is called the *cubic* decimetre or more commonly the litre.

This measure is about equivalent to one quart and is too large to be convenient in measuring medicines. While we find use for pints, quarts and gallons in *preparing* medicines and will in the same way make use of litres, in practice, for measuring medicines we make use of the minim, the fluid dram and the fluid ounce. In a similar way we need a measure in the metric system, smaller than the litre. Therefore, in place of the cubic *deci*-metre or litre, we construct a hollow cube $\frac{1}{100}$ of a metre or one *centi*-metre, in all of its dimensions of length, breadth and depth and call it the cubic centimetre, representing it by the abbreviated sign C.c.

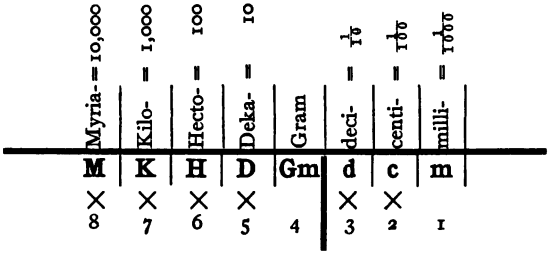
The unit of weight is called the gram. Its origin may be thus explained. A cubic centimetre vessel, when filled with water weighs one gram. It is represented by the sign Gm.

To sum up the units of the several forms of measurement, of length, capacity and weight, we have the metre, the cubic centimetre and the gram. The metre being the measure of length; the cubic centimetre the measure for liquids and the gram the measure of weight.

The prefixes used in signifying the subdivisions and multiples of the measures of capacity and weight are just the same as those

used in the measure of length. We say millimetre, centimetre, decimetre, dekametre, hectometre and kilometre. So we say milli-*litre*, deka-*litre*, centi-*gram*, hecto-*gram*, etc.

The number of prefixes is rather confusing to beginners. Fortunately they are not all in common use. Officially, that is in the United States Pharmacopœia, the terms gram and milligram and the term cubic centimetre are the only ones used and will be the only ones used throughout this work. The following diagram may serve to show how the figures are placed, relatively to the terms used and *also* how they *may* be and how they usually *are* read:



These figures may be read as 87.654 gm. and 321 milligrams. All the other prefixes being discarded as indicated by the × marks. The proper method of writing in the metric system, is that of the Pharmacopœia, that being our standard work. In our old system the signs precede the figures and the figures are the Roman numerals. Thus:

Magnesium sulphate, ... ℥i.
Spirit of peppermint, ... m ×.
Water, ... f ℥ii.

In the metric system the figures precede the sign and the figures are the commonly used Arabic numerals. Thus:

Magnesium sulphate, ... 30 Gm.
Spirit of peppermint, ... 0.600 C.c.
Water, ... 30 C.c.

As the metric system of weight and measure will eventually come into universal use and as there are certain points at which the new and the old will come in contact, it becomes necessary to know their approximate relative values. They are as follows:

500	C.c.	in place of		one pint.
500	Gm.	"	"	one pound.
30	C.c.	"	"	one fluid ounce.
30	Gm.	"	"	one ounce weight.
4	C.c.	"	"	one fluid dram.
4	Gm.	"	"	one dram weight.
1	C.c.	"	"	15 minims.
1	Gm.	"	"	15 grains.

Reversing:

Oi	in place of	500	C.c.
1 lb.	"	500	Gm.
f ℥i	"	30	C.c.
℥i	"	30	Gm.
f ℨi	"	4	C.c.
ℨi	"	4	Gm.
ɱxv	"	1	C.c.
Grs. xv	"	1	Gm.

The approximates to the household measures:

f ℨi	or one	teaspoonful,	or	4 C.c.
f ℨii	" "	dessertspoonful,	or	8 C.c.
f ℨiv	" "	tablespoonful,	or	16 C.c.
f ℥ii	" "	wine-glassful,	or	60 C.c.
f ℥iv	" "	cupful,	or	120 C.c.
f ℥viii	" "	tumblerful,	or	240 C.c.

The approximate equivalents of the fractional parts of the grain need give no trouble if the equivalent of one grain be memorized.

One grain is about 0.065 Gm. ($\frac{65}{1000}$ of a gram or 65 *milli*-grams), or, 0.065 Gm. is about 1 grain.

Sixty-five milligrams being one grain, then half a grain will be half that number, or in round numbers 33 milligrams, 0.033 Gm.

$\frac{1}{4}$ gr. is $\frac{1}{4}$ of 0.065 Gm. or 0.016 Gm.
$\frac{1}{8}$ gr. " $\frac{1}{8}$ " 0.065 Gm. " 0.008 Gm.
$\frac{1}{30}$ gr. " $\frac{1}{30}$ " 0.065 Gm. " 0.002 Gm.
$\frac{1}{60}$ gr. " $\frac{1}{60}$ " 0.065 Gm. " 0.001 Gm.
$\frac{1}{3}$ gr. " $\frac{1}{3}$ " 0.065 Gm. " 0.020 Gm.

Reversing:

0.001 Gm. is $\frac{1}{65}$ of 0.065 Gm. and therefore $\frac{1}{65}$ gr.
0.012 Gm. " $\frac{1}{5}$ " 0.065 Gm. " " $\frac{1}{5}$ gr.
0.020 Gm. " $\frac{1}{3}$ " 0.065 Gm. " " $\frac{1}{3}$ gr.

Familiarity with and the ability to make use of, the metric system, comes, with the majority of people at least, only from enforced practice. And when physicians begin to write their prescriptions in that system and bottles and other packages are labeled so, it will be mastered because it *must* be.

QUESTIONS.

What is the unit of the metric system and what was it derived from?
What are the meaning of deci, centi, milli, Deka, Hecto, Kilo and Myria?
What is the unit of weight?
What is the official unit of fluid measure? Give its origin.
Recite the tables of equivalent values.
Exercise in converting milligrams in fractional parts of grains and vice versa.

CHAPTER IV.

DERIVATION OF DRUGS.

THE official list of the U. S. Pharmacopœia contains almost a thousand names of drugs and preparations, and they are derived from the animal, vegetable and mineral kingdoms.

The following list embraces all the official vegetable drugs. They are arranged in classes, according to the plant-part used. The full Latin and English titles are given and also the common name, if it also is official or very commonly used.

ROOTS.

Latin Name.	*English Name.*
Belladonna radix	Belladonna root
Calumba	Calumba
Glycyrrhiza	Glycyrrhiza (Licorice Root)
Gentiana	Gentian
Krameria	Krameria
Lappa	Lappa
Pareira	Pareira
Pyrethrum	Pyrethrum
Rheum	Rhubarb
Sarsaparilla	Sarsaparilla
Scopola	Scopola
Senega	Senega
Stillingia	Stillingia
Sumbul	Sumbul
Phytolacca	Phytolacca
Taraxacum	Taraxacum (Dandelion)
Gelsemium	Gelsemium
Apocynum	Apocynum (Canadian Hemp)
Althea	Althea (Marshmallow)

TUBERS.

They are the enlarged tips of underground stems.

Jalapa	Jalap
Aconitum	Aconite (Monkshood)
Colchici Cormus	Colchicum Corm.
Scilla	Squill

RHIZOMES.

They are stems growing upon or just beneath the surface of the ground and commonly spoken of as roots.

Podophyllum	Podophyllum (May Apple—Mandrake)
Valeriana	Valerian
Sanguinaria	Sanguinaria (Blood Root)
Geranium	Geranium
Serpentaria	Serpentaria
Spigelia	Spigelia (Pink Root)
Hydrastis	Hydrastis (Golden Seal)
Cimicifuga	Cimicifuga
Leptandra	Leptandra
Zingiber	Ginger
Calamus	Calamus (Sweet Flag)
Triticum	Triticum (Couch Grass)
Veratrum	Veratrum
Cypripedium	Cypripedium (Ladies' Slipper)
Convallaria	Convallaria (Lilly of the Valley)
Berberis	Berberis
Aspidium	Aspidium

WOODS.

Quassia	Quassia
Hæmatoxylon	Hæmatoxylon (Log Wood)
Santalum Rubrum	Red Saunders

BARKS.

Cinchona	Cinchona
Cinchona rubra	Red Cinchona (Calisaya—Peruvian Bark)
Frangula	Frangula
Granatum	Pomegranate
Prunus Virginiana	Wild Cherry
Rhamnus Purshiana	Cascara
Viburnum Opulus	Cramp Bark
Viburnum Prunifolium	Black Haw
Xanthoxylon	Xanthoxylon (Prickly Ash)
Quercus	Quercus (White Oak)
Rubus	Rubus (Blackberry)
Mezereum	Mezereum
Gossypii Cortex	Cotton-root Bark
Euonymus	Euonymus
Quillaja	Quillaja (Soap Bark)
Ulmus	Elm
Cinnamomum Saigonicum	Saigon Cinnamon

BARKS—CONTINUED.

Cinnamomum Zeylanicum	Ceylon Cinnamon
Sassafras	Sassafras.
Hamamelis Cortex	Witch Hazel Bark

LEAVES.

Digitalis	Digitalis (Foxglove)
Uva ursi	Uva Ursi (Bearberry)
Pilocarpus	Pilocarpus (Jaborandi)
Eucalyptus	Eucalyptus
Coca.	Coca
Belladonna Folia	Belladonna Leaf (Deadly Nightshade)
Chimaphilla	Chimaphilla
Eriodictyon	Yerba Santa
Buchu	Buchu
Senna	Senna

HERBS.

Mentha Piperita.	Peppermint
Mentha Viridis	Spearmint
Lobelia	Lobelia
Hedeoma	Pennyroyal
Marrubium	Horehound
Scutellaria	Scutellaria (Skull Cap)
Eupatorium	Boneset
Grindelia	Grindelia
Chirata	Chirata
Cannabis Indica	Indian Cannabis (Ind. Hemp)
Scoparius	Scoparius. (Broom)
Chondrus	Irish Moss

FLOWERS.

Santonica	Santonica. (Broom Tops)
Cusso	Kousso
Rosa Gallica	Red Rose
Caryophyllus	Clove
Calendula	Calendula (Marygold)
Matricaria	German Chamomile
Anthemis	Roman Chamomile
Arnica	Arnica

FRUITS.

Cubeba	Cubeb
Piper	Pepper
Humulus	Hops
Rhus Glabra	Rhus Glabra (Sumac)
Prunum	Prune
Pimenta	Pimenta (Allspice)
Capsicum	Capsicum (Cayenne Pepper)

FRUITS—CONTINUED.

Colocynthis	Colocynth (Bitter Apple)
Cassia Fistula	Purging Cassia
Cardamomum	Cardamom
Vanilla	Vanilla
Coriandrum	Coriander
Conium	Conium (Hemlock)
Fœniculum	Fennel
Carum	Caraway
Anisum	Anise
Limonis Cortex	Lemon Peel
Aurantii Amari Cortex	Bitter Orange Peel
Aurantii Dulcis Cortex	Sweet Orange Peel
Tamarindus	Tamarind
Ficus	Fig
Sabal	Sabal (Saw Palmetto)

SEEDS.

Nux Vomica	Nux Vomica
Strophanthus	Strophanthus
Amygdala Amara	Bitter Almond
Amygdala Dulcis	Sweet Almond
Physostigma	Calabar Bean
Pepo	Pepo (Pumpkin Seed)
Sinapis Alba	White Mustard
Sinapis Nigra	Black Mustard
Staphisagria	Staphisagria (Larkspur)
Linum	Linum (Flax Seed)
Myristica	Myristica (Nutmeg)
Colchici Semen	Colchicum Seed

UNCLASSIFIED PARTS OF PLANTS.

Ergota	Ergot
Galla	Nutgal
Sassafras Medulla	Sassafras pith
Zea	Zea (Corn Silk)
Gossypium Purificatum	Purified Cotton (Absorbent Cotton)
Lupulinum	Lupulin
Lycopodium	Lycopodium
Amylum	Starch

DRIED EXTRACTS AND JUICES.

Opium	Opium
Guarana	Guarana
Lactucarium	Lactucarium (Lettuce)
Aloe	Aloes
Gambir	Gambir
Kino	Kino
Elastica	Rubber

SACCHARINE SUBSTANCES.

Saccharum	Sugar
Manna	Manna
Saccharum Lactis	Sugar of Milk
Mel	Honey

GUMS.

Acacia	Acacia (Gum Arabic)
Tragacantha	Tragacanth.

GUM RESINS.

Assafœtida	Assafœtida
Myrrha	Myrrha
Cambogia	Gamboge

RESINS.

Mastiche	Mastic
Benzoinum	Benzoin
Guaiacum	Guaiac
Resina	Rosin

BALSAMS.

Balsamum Peruvianum	Balsam Peru
Balsamum Tolutanum	Balsam Tolu
Styrax	Storax

OLEO-RESINS.

Copaiba	Copaiba
Terebinthinas Canadensis	Canada Turpentine
Terebinthina	Turpentine
Pix Liquida	Tar
Oleum Cadinum	Oil of Cade

CAMPHORS.

Camphora	Camphor
Thymol	Thymol
Menthol	Menthol

FIXED OILS, FATS AND WAXES.

Oleum Amygdalæ Expressum	Expressed Oil of Almond (Sweet Oil of Almond)
Oleum Morrhuæ	Cod Liver Oil
Adeps	Lard
Sevum Præparatum	Prepared Suet
Cetaceum	Spermaceti
Cera Flava	Yellow Wax
Cera Alba	White Wax

DRUGS OF ANIMAL ORIGIN.

Cantharis	Cantharides (Spanish Fly)
Moschus	Musk
Pepsinum	Pepsin
Pancreatinum	Pancreatin
Glanduleæ Thyroideæ Siccæ	Dried Thyroid Gland
Glanduleæ Suprarenaleæ Siccæ	Dried Supra-renal Gland
Fel Bovis	Ox Gall
Serum Antidiphthericum	Antidiphtheric Serum (Diphtheria Antitoxin)
Gelatinum	Gelatin

QUESTIONS.

Latin and English titles and common name, if one is given, and plant part used: Belladonna, gentian, licorice, rhubarb, dandelion, aconite, squill, blood root, quassia, Peruvian bark, foxglove, peppermint, chamomile, bitter apple, nux vomica, ergot, opium, sugar, asafetida, cod-liver oil, cantharides.

CHAPTER V.

AQUEOUS PREPARATIONS.

AQUÆ—WATERS.

In its pharmacopœial meaning a water is a solution of a volatile substance in water, a volatile substance being one, which by evaporation at the ordinary temperature of the air, loses its strength.

With a few exceptions, the waters are used for flavoring purposes. They should be freshly made and possess the odor of the substances indicated by the title. They should be clear and transparent, showing no deposit nor any fungous growths.

The list of official waters given here is divided into three classes, because they are made by three different processes.

Those of the first class are made by agitating the substance with water until it is dissolved and then filtering, and all of them have slight medicinal value.

Aquæ Creosoti	Creosoti Water
Aqua Chloroformi	Chloroform Water
Aqua Amygdalæ Amari	Bitter Almond Water

Those of the second class are made by the following process: The oil is rubbed in a mortar, with the water and the insoluble powder known as talcum, and then filtered. The oil of the drug is used, rather than the drug itself, because it is of a definite strength and also more convenient. Any oil remaining undissolved is held back in the filter by the talcum, the latter being used for that purpose.

Whenever possible, simple processes like this one are better impressed upon the pupil's mind by visiting the dispensary and watching them while being done by the apothecary.

Aqua Anisi	Anise Water
Aqua Cinnamomi	Cinnamon Water
Aqua Fœniculi	Fennel Water
Aqua Mentha Piperita	Peppermint Water
Aqua Mentha Viridis	Spearmint Water

The third class are made by distillation. When water is heated, it is converted into vapor. If the vapor is conducted into a cooled receiver, it is condensed into its original form again. Advantage is taken of this natural phenomenon to separate volatile from non-volatile substances.

The process requires a still and the simplest form of still consists of a glass flask, having its long neck bent over at an acute angle, and of a size to fit into the straight neck of another flask. The substance to be distilled, rose leaves for example, is placed in the first flask with some water and connected with the receiving flask, which is surrounded by ice or cold water. Upon applying heat to the flask containing the rose leaves and water, the volatile oil in the leaves, together with the water, distill over into the chilled flask, where the two condense together and the condensed product is rose water.

Aqua Aurantii Florum Fortior	Stronger Orange Flower Water
Aqua Destillata	Distilled Water
Aqua Hamamelidis	Hamamelis Water (Witch Hazel Extract)
Aqua Rosæ Fortior	Stronger Rose Water

The fourth class are made by dilution of the stronger waters of the same name, with distilled water.

Aqua Ammoniæ	Ammonia Water
Aqua Rosæ	Rose Water
Aqua Aurantii Florum	Orange Flower Water

The fifth class are made by chemical processes.

Aqua Ammoniæ Fortior	Stronger Ammonia Water
Aqua Hydrogenii Dioxidi	Hydrogen Dioxide Water

LIQUORES—SOLUTIONS.

The liquors are solutions of non-volatile substances in water. They should, like the waters, be free from sediment.

Liquor Acidi Arsenosi	Solution of Arsenous Acid
Liquor Ammonii Acetatis	Solution of Ammonium Acetate (Spirit of Mindererus)
Liquor Antisepticus	Antiseptic Solution
Liquor Arseni et Hydrargyri Iodidi	Solution of Arsenic and Mercuric Iodide (Donovan's Solution)
Liquor Calcis	Solution of Calcium Hydroxide (Lime Water)
Liquor Chlori Compositus	Compound Solution of Chlorine
Liquor Cresolis Compositus	Compound Solution of Cresol
Liquor Ferri Chloridi	Solution of Ferric Chloride
Liquor Ferri et Ammonii Acetatis	Solution of Iron and Ammonium Acetate (Basham's Mixture)
Liquor Ferri Subsulphatis	Solution of Subsulphate of Iron (Monsel's Solution)
Liquor Ferri Tersulphatis	Solution of Ferric Sulphate
Liquor Formaldehydi	Solution of Formaldehyde
Liquor Hydrargyri Nitratis	Solution of Mercuric Nitrate
Liquor Iodi Compositus	Compound Solution of Iodine (Lugol's Solution)
Liquor Magnesii Citratis	Solution of Magnesium Citrate
Liquor Plumbi Subacetatis	Solution of Lead Subacetate
Liquor Plumbi Subacetatis Dilutus	Dilute Solution of Lead Subacetate (Goulard's Extract)
Liquor Potassii Arsenitis	Solution of Potassium Arsenite (Fowler's Solution)
Liquor Potassii Citratis	Solution of Potassium Citrate
Liquor Potassii Hydroxidi	Solution of Potassium Hydroxide (Liquor Potassa)
Liquor Sodii Chlorinata	Solution of Chlorinated Soda (Labarraque's Solution)
Liquor Sodii Arsenatis	Solution of Sodium Arsenate (Pearson's Solution)
Liquor Sodii Hydroxidi	Solution of Sodium Hydroxide
Liquor Sodii Phosphatis Compositus	Compound Solution of Sodium Phosphate
Liquor Zinci Chloridi	Solution of Zinc Chloride

THE SYRUPS.

SYRUPI—SYRUPS.

These are solutions of either vegetable or mineral substances in water, sweetened with a large proportion of sugar.

Being solutions, they should be clear; but owing to the refractory nature of some of the drugs used, it is sometimes difficult to make them so permanently and quite often they are cloudy, and they sometimes ferment.

SYRUPUI. (Syrupus)	SYRUPS. (Simple Syrup.)
Syrupus Acaciæ	Syrup of Acacia
Syrupus Acidi Citrici	Syrup of Citric Acid
Syrupus Acidi Hydriodici	Syrup of Hydriodic Acid
Syrupus Amygdalæ	Syrup of Almond
Syrupus Aurantii	Syrup of Orange
Syrupus Aurantii Florum	Syrup of Orange Flower
Syrupus Calcii Lactophosphatis	Syrup of Calcium Lactophosphate
Syrupus Calcis	Syrup of Lime
Syrupus Ferri Iodidi	Syrup of Ferrous Iodide
Syrupus Ferri, Quininæ et Strychninæ Phosphatum	Syrup of the Phosphates of Iron, Quinine and Strychnine
Syrupus Hypophosphitum	Syrup of the Hypophosphites
Syrupus Hypophosphitum Compositus	Compound Syrup of Hypophosphites
Syrupus Ipecacuanhæ	Syrup of Ipecac
Syrupus Krameriæ	Syrup of Krameria
Syrupus Lactucarii	Syrup of Lactucarium
Syrupus Picis Liquidæ	Syrup of Tar
Syrupus Pruni Virginianæ	Syrup of Wild Cherry
Syrupus Rhei	Syrup of Rhubarb
Syrupus Rhei Aromaticus	Aromatic Syrup of Rhubarb
Syrupus Rosæ	Syrup of Rose
Syrupus Rubi	Syrup of Rubus
Syrupus Sarsaparillæ Compositus	Compound Syrup of Sarsaparilla
Syrupus Scillæ	Syrup of Squill
Syrupus Scillæ Compositus	Compound Syrup of Squill
Syrupus Senegæ	Syrup of Senega (Hive Syrup)
Syrupus Sennæ	Syrup of Senna
Syrupus Tolutanus	Syrup of Tolu
Syrupus Zingiberis	Syrup of Ginger

MELLITA—HONEYS.

These are solutions of medicinal substances mixed with honey.

Mel	Honey
Mel Depuratum	Clarified Honey
Mel Rosæ	Honey of Roses

MUCILAGINES—MUCILAGES.

Mucilages are thick, viscid solutions made by dissolving various gums or substances of a gummy nature in water and straining through gauze or other clarifying material.

They should be free from sediment, but are not always transparent. They are best preserved in bottles tied over with gauze rather than stoppered.

Mucilago Acaciæ	Mucilage of Acacia
Mucilago Sassafras Medullæ	Mucilage of Sassafras Pith
Mucilago Tragacanthæ	Mucilage of Tragacanth
Mucilago Ulmi	Mucilage of Elm

MISTURÆ—MIXTURES.

These are aqueous preparations containing insoluble substances, held in suspension by gum, sugar or some other viscid substance.

They are not transparent like solutions and when left standing for a time, the insoluble substance is deposited at the bottom of the bottle. Mixtures should be thoroughly shaken, before they are used.

MISTURA CRETA—CHALK MIXTURE.

Mistura Ferri Composita	Compound Iron Mixture (Griffith's Mixture)
Mistura Glycyrrhiza Composita	Compound Mixture of Glycyrrhiza (Brown Mixture)
Mistura Rhei et Sodæ	Mixture of Rhubarb and Soda

EMULSA—EMULSIONS.

An emulsion is an aqueous compound containing oil or resin held in suspension by gum, malt, yolk of egg or other suitable substance.

Emulsum Amygdalæ	Emulsion of Almond
Emulsum Asafœtidæ	Emulsion of Asafœtida
Emulsum Chloroformi	Emulsion of Chloroform
Emulsum Olei Morrhuæ	Emulsion of Cod Liver Oil
Emulsum Olei Morrhuæ cum Hypophosphitibus	Emulsion of Cod Liver Oil with Hypophosphite
Emulsum Olei Terebinthinæ	Emulsion Oil of Turpentine

GLYCERITA—GLYCERITES.

These are solutions of medicinal substances in glycerin.

Glyceritum Acidi Tanici	Glycerite of Tannic Acid
Glyceritum Amyli	Glycerite of Starch
Glyceritum Boroglycerini	Glycerite of Boroglycerin
Glyceritum Ferri, Quininæ et Strychninæ Phosphatum	Glycerite of Iron, Quinine and Strychnine Phosphate
Glyceritum Hydrastis	Glycerite of Hydrastis
Glyceritum Phenolis	Glycerite of Phenol (Glycerite of Carbolic Acid)

INFUSA—INFUSIONS.

Unless otherwise directed by the Pharmacopœia or by the prescriber, the strength of infusions is 5 per cent. (about one ounce of drug to one pint of water). They are made by steeping the drug in water. Cold water if a volatile and hot water if a non-volatile drug is used.

After steeping the drug for an hour in cold water, or allowing it to stand in hot water until it has become cold, the infusion is strained through a cloth. They should be freshly made as they easily spoil in a short time.

Infusum Digitalis	Infusion of Digitalis
Infusum Pruni Virginianæ	Infusion of Wild Cherry
Infusum Sennæ Compositus	Compound Infusion of Senna (Black Draught)

DECOCTA—DECOCTIONS.

These are made from the more refractory drugs by boiling them with water for 15 minutes and then straining. There are no official decoctions.

LINIMENTA—LINIMENTS.

These are mixtures or solutions of aromatic oils, ammonia and other stimulants, counterirritants or anodyne drugs, with oil or alcohol and intended for external use.

Linimentum Ammoniæ	Ammonia Liniment (Hartshorn Liniment) Volatile Liniment
Linimentum Belladonnæ	Belladonna Liniment
Linimentum Calcis	Lime Liniment (Carron Oil)
Linimentum Camphoræ	Camphor Liniment (Camphorated Oil)
Linimentum Chloroformi	Chloroform Liniment
Linimentum Saponis	Soap Liniment
Linimentum Saponis Mollis	Soft Soap Liniment
Linimentum Terebinthinæ	Turpentine Liniment

OLEATA—OLEATES.

These are chemical compounds of oleic acid with the substances indicated by the title. They are for external use.

Oleatum Atropinæ	Oleate of Atropine
Oleatum Cocainæ	Oleate of Cocaine
Oleatum Hydrargyri	Oleate of Mercury
Oleatum Quininæ	Oleate of Quinine
Oleatum Veratrinæ	Oleate of Veratrine

QUESTIONS.

Define the official term waters.
How many classes are there and how is each class produced?
Define the official term liquors or solutions.
Latin names of those known best by their common names.
Define and describe the official term syrup.
Define and describe mucilages, mixtures, emulsions, infusions, decoctions, liniments.

CHAPTER VI.

ALCOHOLIC PREPARATIONS

SPIRITI—SPIRITS. (Essences.)

THESE are solutions of volatile substances in alcohol.

Spiritus Ætheris	Spirit of Ether
Spiritus Ætheris Compositus	Compound Spirit of Ether (Hoffman's Anodyne)
Spiritus Ætheris Nitrosi	Spirit of Nitrous Ether (Sweet Spirit of Nitre)
Spiritus Ammoniæ	Spirit of Ammonia
Spiritus Ammoniæ Aromaticus	Aromatic Spirit of Ammonia
Spiritus Amygdalæ Amaræ	Spirit of Bitter Almond
Spiritus Anisi	Spirit of Anise
Spiritus Aurantii Compositus	Compound Spirit of Orange
Spiritus Camphoræ	Spirit of Camphor
Spiritus Chloroformi	Spirit of Chloroform
Spiritus Cinnamomi	Spirit of Cinnamon
Spiritus Frumenti	Whiskey
Spiritus Gaultheriæ	Spirit of Gaultheria
Spiritus Glycerylis Nitratis	Spirit of Glyceryl Trinitrate (Spirit of Nitroglycerin)
Spiritus Juniperi	Spirit of Juniper
Spiritus Juniperi Compositus	Compound Spirit of Juniper
Spiritus Lavendulæ	Spirit of Lavender
Spiritus Menthæ Piperitæ	Spirit of Peppermint
Spiritus Menthæ Viridis	Spirit of Spearmint
Spiritus Vini Gallici	Brandy

ELIXIRIA—ELIXIRS.

These are solutions of medicinal substances in water and alcohol flavored with aromatics and sugar. They contain about 25 per cent. of alcohol.

Elixir Adjuvans	Adjuvant Elixir
Elixir Aromaticum	Aromatic Elixir
Elixir Ferri, Quininæ et Strychninæ Phosphatum	Elixir of Iron, Quinine and Strychnine Phosphates ($\frac{1}{60}$ gr. of Strychnine to f ℥j)

COLLODIA—COLLODIONS.

These are solutions of gun cotton in ether and alcohol. Other substances are added to them to render them fit for special uses.

Collodium	Collodion
Collodium Cantharidatam	Cantharidal Collodion
Collodium Flexile	Flexible Collodion
Collodium Stypticum	Styptic Collodion

TINCTURÆ—TINCTURES.

These are alcoholic or dilute alcoholic solutions of the soluble constituents of a vegetable drug. There are several exceptions, in which the substance dissolved is of mineral origin.

This large and important class of preparations are made in three ways, viz.: By maceration, by solution and by percolation.

Maceration.—This process consists in soaking the drug in a suitable solvent for seven days or more and then filtering.

Solution consists in mixing the substance with the solvent liquid and agitating until dissolved.

Percolation, by which process the greater portion of the tinctures are made, is conducted in the following way: The drug, in powdered form, is first moistened and poured into a cylindrical or conical shaped vessel, open at the upper end and with a narrow outlet at the lower end, called a percolator, and settled into the vessel by shaking gently. The solvent is then poured on to the drug and allowed to run slowly through at the rate of three or four drops per minute till the desired quantity of tincture is obtained. By that time, if the process has been properly conducted the drug is entirely exhausted of all its soluble medicinal principles; that which is left in the percolator being quite inert.

The tinctures of all the poisonous drugs are of the uniform

strength of 10 per cent.; each minim of the tincture being equal in value to $\frac{1}{10}$ of a grain of the drug from which it is made.

The tinctures of the non-poisonous drugs are of the uniform strength of 20 per cent.; each minim of the tincture being equal to $\frac{1}{5}$ of a grain of the drug from which it is made.

There are several exceptions noted in the list.

Tinctura Aconiti	Tincture of Aconite
Tinctura Aloes	Tincture of Aloes
Tinctura Aloes et Myrrhæ	Tincture of Aloes and Myrrh
Tinctura Arnicæ	Tincture of Arnica
Tinctura Asafœtidæ	Tincture of Asafœtida
Tinctura Aurantii Amari	Tincture of Bitter Orange Peel
Tinctura Aurantii Dulcis	Tincture of Sweet Orange Peel, 50%
Tinctura Belladonna Foliorum	Tincture Belladonna Leaf
Tinctura Benzoini	Tincture Benzoin
Tinctura Benzoini Compositus	Compound Tincture of Benzoin (Turlington's Balsam)
Tinctura Calendulæ	Tincture of Calendula
Tinctura Calumbæ	Tincture of Calumba
Tinctura Cannabis Indicæ	Tincture of Cannabis Indica
Tinctura Cantharidis	Tincture of Cantharides
Tinctura Capsici	Tincture of Capsicum
Tinctura Cardamomi	Tincture of Cardamom
Tinctura Cardamomi Composita	Compound Tincture of Cardamom
Tinctura Cimicifugæ	Tincture Cimicifuga
Tinctura Cinchonæ	Tincture Cinchona
Tinctura Cinchonæ Composita	Compound Tincture of Cinchona
Tinctura Cinnamomi	Tincture of Cinnamon
Tinctura Colchici Seminis	Tincture Colchicum Seed
Tinctura Digitalis	Tincture Digitalis
Tinctura Ferri Chloridi	Tincture Ferric Chloride
Tinctura Gallæ	Tincture of Nut Gall
Tinctura Gambir Composita	Compound Tincture Gambir
Tinctura Gelsemii	Tincture of Gelsemium
Tinctura Gentianæ Composita	Compound Tincture of Gentian
Tinctura Guaiaci	Tincture of Guaiacum.
Tinctura Guaiaci Composita	Compound Tincture of Guaiacum
Tinctura Hydrastis	Tincture of Hydrastis
Tinctura Hyoscyami	Tincture of Hyoscyamus
Tinctura Iodi	Tincture of Iodine, 7%
Tinctura Ipecacuanhæ et Opii	Tincture of Ipecac and Opium
Tinctura Kino	Tincture of Kino
Tinctura Krameriæ	Tincture of Krameria
Tinctura Lactucarii	Tincture of Lactucarium
Tinctura Lavandulæ Composita	Compound Tincture of Lavender

Tinctura Limonis Cortex	50% Tincture of Lemon Peel
Tinctura Lobeliæ	Tincture of Lobelia
Tinctura Moschi	Tincture of Musk
Tinctura Myrrhæ	Tincture of Myrrh.
Tinctura Nucis Vomicæ	Tincture of Nux Vomica ($1\ \mathfrak{m} = \frac{1}{1000}$ grain Strychnine)
Tinctura Opii	Tincture of Opium (Laudanum)
Tinctura Opii Camphorata	Camphorated Tincture of Opium (Paregoric)
Tinctura Opii Deodorata	Tincture of Deodorized Opium
Tinctura Physostigmatis	Tincture of Physostigma
Tinctura Pyrethri	Tincture of Pyrethrum
Tinctura Quassiæ	Tincture of Quassia
Tinctura Quillajæ	Tincture of Quillaja
Tinctura Rhei	Tincture of Rhubarb
Tinctura Rhei Aromatica	Aromatic Tincture of Rhubarb
Tinctura Sanguinariæ	Tincture Sanguinaria
Tinctura Scillæ	Tincture Squill
Tinctura Serpentariæ	Tincture Serpentaria
Tinctura Stramonii	Tincture Stramonium
Tinctura Strophanthi	Tincture Strophanthus
Tinctura Tolutanæ	Tincture of Tolu
Tinctura Valerianæ	Tincture of Valerian
Tinctura Valerianæ Ammoniati	Ammoniated Tincture of Valerian
Tinctura Vanillæ	Tincture of Vanilla
Tinctura Veratri	Tincture of Veratrum
Tinctura Zingiberis	Tincture of Ginger
Tinctura Herbarum Recentum	Tincture of Fresh Herbs

VINA—WINES.

These are solutions of the soluble principles of drugs in sherry wine.

Vinum Album	White Wine
Vinum Antimonii	Wine of Antimony
Vinum Cocæ	Wine of Coca
Vinum Colchici Seminis	Wine of Colchicum Seed
Vinum Ergotæ	Wine of Ergot
Vinum Ferri	Wine of Iron
Vinum Ferri Amarum	Bitter Wine of Iron
Vinum Ipecacuanhæ	Wine of Ipecac
Vinum Opii	Wine of Opium
Vinum Rubrum	Red Wine

FLUIDEXTRACTA—FLUIDEXTRACTS.

These are concentrated solutions of the active principles of vegetable drugs. They are made principally by percola-

tion, just as the tinctures are; but possess two important advantages over that class of preparations: First, they are concentrated to the smallest possible bulk, and second, they are all the same strength, one cubic centimeter of a fluidextract being the equivalent of one gram of the drug from which it is made, or expressing in our old system, one minim of fluidextract and one grain of drug are equal in medicinal value. There are eighty-five official fluidextracts and only those frequently used are given in this place, the complete list being placed in the epitome of the pharmacopœial preparations at the end of the book.

Fluidextractum Apocyni	Fluidextract of Apocynum
Fluidextractum Belladonnæ Radicis	Fluidextract of Belladonna Root
Fluidextractum Buchu	Fluidextract of Buchu
Fluidextractum Cocæ	Fluidextract of Coca
Fluidextractum Colchici Seminis	Fluidextract of Colchicum Seed
Fluidextractum Convallariæ	Fluidextract of Convallaria
Fluidextractum Ergotæ	Fluidextract of Ergot
Fluidextractum Eriodictyi	Fluidextract of Eriodictyon (Yerba Santa)
Fluidextractum Eucalypti	Fluidextract of Eucalyptus
Fluidextractum Gelsemii	Fluidextract of Gelsemium
Fluidextractum Glycyrrhizæ	Fluidextract of Glycyrrhiza (Licorice)
Fluidextractum Guaranæ	Fluidextract of Guarana
Fluidextractum Hydrastis	Fluidextract of Hydrastis
Fluidextractum Ipecacuanhæ	Fluidextract of Ipecac
Fluidextractum Pilocarpi	Fluidextract of Pilocarpus (Jaborandi)
Fluidextractum Pruni Virginianæ	Fluidextract of Wild Cherry
Fluidextractum Rhamni Purshianæ	Fluidextract of Cascara Sagrada
Fluidextractum Rhamni Purshianæ Aromaticum	Aromatic Fluidextract Cascara Sagrada
Fluidextractum Rhei	Fluidextract of Rhubarb
Fluidextractum Sarsaparillæ Compositum	Compound Fluidextract of Sarsaparilla
Fluidextractum Sennæ	Fluidextract of Senna
Fluidextractum Uvæ Ursi	Fluidextract of Uva Ursi
Fluidextractum Valerianæ	Fluidextract of Valerian
Fluidextractum Veratri	Fluidextract of Veratrum
Fluidextractum Viburnum Opului	Fluidextract of Viburnum Opulus (Cramp Bark)
Fluidextractum Zingiberis	Fluidextract of Ginger

QUESTIONS.

Define spirits.

Latin names of those best known by their common names.

Define elixir.

Define and describe the several methods of preparing tinctures.

What is the percentage strength of the tinctures of poisonous and non-poisonous drugs?

How much strychnine in one minim of tincture of nux vomica?

Give Latin titles of the several tinctures best known by a common name.

Define fluidextracts and state how they differ from tinctures.

CHAPTER VII.

MISCELLANEOUS PREPARATIONS.

OLEO-RESINÆ—OLEO-RESINS.

OLEO-RESINS are one form of active principles which are dissolved out of a drug by percolating it with ether and then evaporating the ether, the residue being the oleo-resin.

Oleoresina Aspidii	Oleoresin of Aspidium (Male Fern)
Oleoresina Capsici	Oleoresin of Capsicum (Cayenne Pepper)
Oleoresina Cubebæ	Oleoresin of Cubeb
Oleoresina Lupulini	Oleoresin of Lupulin
Oleoresina Piperis	Oleoresin of Pepper
Oleoresina Zingiberis	Oleoresin of Ginger

ACETA—VINEGARS.

The vinegars are made by macerating or percolating a drug with either diluted acetic acid or vinegar; some drugs yielding their active principles more readily to that menstruum, than to alcohol.

Acetum Opii	Vinegar of Opium (Black Drop)
Acetum Scillæ	Vinegar of Squill

EXTRACTA—EXTRACTS.

Extracts, or solid extracts as they are called, are usually made by carefully evaporating fluidextracts at a low heat, to avoid burning, until they are brought to what is called a pilular consistence; by which is meant one which will permit of being readily rolled into pill form and insure permanency of shape.

As a rule they are concentrated to about four times the strength of the drug from which they are made and the dose is therefore only one-fourth that of the drug, one-quarter of a grain of

extract being equal to one grain of the drug from which it is made.

They are used in pill or suppository form and generally several are used together. See official list at end of book.

RESINÆ—RESINS.

The official resins are the active principles of the drugs from which they are obtained. They are dissolved out of the drug with alcohol and, being insoluble in water, when the alcoholic solution is mixed with water, they are thrown out of solution, separated by filtration and dried. Like the extracts they are used in pill form.

Resina Jalapæ	Resin of Jalap
Resina Podophylli	Resin of Podophyllum
Resina Scammonii	Resin of Scammony

PULVERES—POWDERS.

The official powders are compound, being made up of two or more powders intimately mixed so as to be indistinguishable, one from the other.

Pulvis Acetanilidi Compositus	Compound Acetanilide Powder (Acetanilide, Caffeine and Sodium Bicarbonate)
Pulvis Aromaticus	Aromatic Powder
Pulvis Cretæ Compositus	Compound Chalk Powder
Pulvis Effervescens Compositus	Compound Effervescing Powder (Seitlitz Powder)
Pulvis Glycyrrhizæ Compositus	Compound Powder of Glycyrrhiza
Pulvis Ipecacuanhæ et Opii	Powder of Ipecac and Opium (Dover's Powder)
Pulvis Jalapæ Compositus	Compound Powder of Jalap
Pulvis Morphinæ Compositus	Compound Powder of Morphine (Tully's Powder)
Pulvis Rhei Compositus	Compound Rhubarb Powder

TRITURATIONES—TRITURATIONS AND TABLETÆ—TABLETS.

Triturations and tablet triturates are composed of medicines, the dose of which is too small to be handled conveniently.

They are for that reason mixed with sugar of milk, in sufficient quantity to facilitate the handling of them.

While there are innumerable tablet triturates in use, there are none official.

CONFECTIONES—CONFECTIONS.

There are mixtures of disagreeable drugs with spices and sugar or honey, made into a paste or jelly-like form. Some are medicinal and others are used as vehicles for bringing other drugs into pill form.

Confectio Rosæ	Confection of Rose
Confectio Sennæ	Confection of Senna

PILULÆ—PILLS.

These consist of medicines mixed together in a mass of a consistence to be rolled into globular form.

Pilulæ Catharticæ Compositæ	Compound Cathartic Pills
Pilulæ Catharticæ Vegetabiles	Vegetable Cathartic Pills
Pilulæ Ferri Carbonatis	Carbonate of Iron Pills (Blaud's Pills)
Pilulæ Opii	Pills of Opium
Pilulæ Rhei Composita	Compound Pills of Rhubarb

CERATI, CERATES—UNGUENTA, OINTMENTS.

They are composed of medicinal substances mixed with fats, wax, resin, vaselin and oils.

An ointment melts at the body temperature while a cerate remains upon the surface of the body without melting and both are intended for external use.

EMPLASTRA—PLASTERS.

Plasters differ from cerates and ointments in that the medicinal agent is mixed with an adhesive body, the basis of which is gutta percha and are designed to adhere to the surface of the body, until they are removed. See official list.

SUPPOSITORIA—SUPPOSITORIES.

The Pharmacopœia describes suppositories as solid bodies of various weights and shape adapted for introduction into the different orifices of the human body, and melting readily at blood heat. The vehicles usually employed are oil of theobroma (cocoa butter), glycerinated gelatin or sodium stearate.

CATAPLASMA—CATAPLASMS.

The official cataplasma kaolini or cataplasm of koline is typical of these compounds. It is familiar under such trade names as "Antiphlogistine," "Antithermoline," etc., and they are mixtures of various aluminum clays, with glycerin, worked together into a stiff paste, and incorporated with it are various antiseptic volatile oils, such as oil of gaultheria—eucalyptus, peppermint, thymol and others. They are used externally.

GRANULAR EFFERVESCENT SALTS.

These are compounds of various chemicals with sodium bicarbonate and tartaric acid which, when mixed with water, effervesce and form a drink more agreeable to take than the same substances would be if simply dissolved in water.

Caffeina Citrata Effervescens	Effervescent Citrated Caffeine
Lithii Citras Effervescens	Effervescent Lithium Citrate
Magnesii Sulphas Effervescens	Effervescent Magnesium Sulphate
Sodii Phosphas Effervescens	Effervescent Sodium Phosphate

QUESTIONS.

Define oleo-resin, vinegars, extracts, resins, powders, triturations, tablets, confections, pills, cerates, ointments, plasters, cataplasms, effervescent salts, and give example of each.

CHAPTER VIII.

DOSAGE.

THE average dose of all drugs, their preparations and active principles as well as the chemicals are given in the Pharmacopœia. Nevertheless, the plan which has been followed in former editions of this work will be adhered to.

The vegetable drugs are divided into three classes.

The first class is given in doses of from ½ to 2 grains or from 0.030 to 0.130 Gm.

There are six of these drugs, as follows:

Aconite, Cantharides, Digitalis, Opium, Physostigma and **Strophanthus.**

The second class are given in doses of from 1 to 3 grains, or 0.065 to 0.190 Gm.

There are nineteen of them:

Aloes, Belladonna, Camboge, Cannabis Indica, Capsicum, Colocynth, Conium, Gelsemium, Hyoscyamus, Ipecac, Lobelia, Musk, Nux Vomica, Pulsatilla, Savin, Squill, Scopola, Stramonium and **Veratrum.**

The third class includes all other vegetable drugs, which are given in doses of from 5 to 30 grains or from 0.325 to 2.0 Gms.

Some of the more commonly used ones, are: **Benzoin, Calumba, Cardamom, Cascara, Cinchona, Gentian, Guaiacum, Hops, Myrrh, Rhubarb, Senna, Valerian.**

The names of the first two classes should be committed to memory.

By doing this, the task of learning separately the doses of the various preparations of them is greatly simplified, as shown by the following rule:

The tinctures of the poisonous drugs are all of a uniform strength of 10 per cent., each minim representing $\frac{1}{10}$ of a grain of drug.

The tinctures of the non-poisonous drugs are 20 per cent. in strength, each minim representing $\frac{1}{8}$ of a grain of drug.

The fluidextracts are 100 per cent. in strength, each minim representing 1 grain of drug. Therefore if one knows the dose of the drug, the relative drug value of any preparation of it can be easily obtained.

To illustrate:

What is the dose of tincture of opium? The dose of the drug is from $\frac{1}{2}$ to 2 grains. The tincture being a 10 per cent. tincture, each minim containing $\frac{1}{10}$ grain of opium, 5 minims will contain $\frac{5}{10}$ and 20 minims $\frac{20}{10}$ of a grain or $\frac{1}{2}$ and 2 grains respectively. The dose therefore is 5 to 20 minims.

How much opium in a teaspoonful of the tincture? A teaspoonful is 60 minims and 60 minims of tincture of opium contain $\frac{60}{10}$ or 6 grains of opium.

With the tinctures of the non-poisonous drugs an approximate rule answers the purpose.

They are all 20 per cent. in strength.

If the percentage strength is multiplied by five, the product gives us the approximate number of grains in each fluid ounce.

To illustrate:

What is the dose of tincture of rhubarb? The dose of the drug is 5 to 30 grains. The tincture is 20 per cent. in strength. There are therefore 100 grains in each fluid ounce. In one fluid dram there are $\frac{1}{8}$ of 100 grains or $12\frac{1}{2}$ grains and therefore 1 fluid dram will be an average dose.

With fluidextracts the matter is very simple. Each minim is equal to 1 grain of drug. If the dose of the drug is 2 grains the corresponding dose of the fluidextract is 2 minims.

QUESTIONS.

Name the drugs in the first two classes and their doses in both systems of weight.

Practice the pupils many times over in this and the succeeding lessons in therapeutics, according to the examples here given, illustrating the estimation of doses.

CHAPTER IX.

CHEMISTRY AND THE OFFICIAL CHEMICALS.

"**Chemistry,**" according to Webster, "Is that branch of science which treats of the composition of substances and the changes which they undergo."

All substances, whether gaseous, fluid or solid, are either simple or compound—either consist of a single substance or several substances, chemically united.

Simple substances are called elements.

An element is a substance which cannot be decomposed by any of the several forces usually employed for that purpose.

It is a peculiarity of chemical force, that when it has caused the union of two or more substances, they become lost to our common senses of observation and take on properties quite different from those possessed by the substances in their original state.

Every one is familiar with the appearance of sulphur, a hard, brittle, yellow substance, with a characteristic odor and burning readily with suffocating fumes; and with iron, and with oxygen gas, one of the elements of the air.

When these three substances are caused to unite, they can no longer be distinguished one from the other by their former properties. But another and altogether different substance is produced, known as copperas of sulphate of iron. This is a translucent green crystal. It is not inflammable like sulphur. It is not hard nor malleable like iron and unlike either of those substances it is soluble in water, and no trace of oxygen gas is to be seen. It affords a good example of the change that takes place in the nature of substances which have been chemically combined.

By the application of the proper forces, its constituent elements may all be separated again and obtained in their original form.

But sulphur and iron and oxygen cannot be decomposed because each is a simple, uncombined element.

The following list includes the more important elements, entering into official chemicals. Those which are used in their elementary state are in italics. The symbol or short-hand sign follows each name.

Boron B
Calcium Ca
Carbon C (Charcoal)
Cerium Ce
Chlorine Cl
Chromium Cr
Copper Cu (Cuprum)
Gold Au (Aurum)
Hydrogen H
Iodine I
Iron Fe (Ferrum)
Lead Pb (Plumbum)
Lithium Li
Magnesium Mg
Mercury Hg (Hydrargyrum)
Nitrogen N
Oxygen O
Phosphorus P
Potassium K (Kalium)
Silicon Si
Silver Ag (Argentum)
Sodium Na (Natrium)
Strontium Sr
Sulphur S
Zinc Zn

OXYGEN, HYDROGEN AND NITROGEN.

Owing to the important parts which oxygen, hydrogen and nitrogen play in the phenomena of life, they deserve some attention, although little used as such in medicine.

Air is a mixture of four-fifths nitrogen and one-fifth oxygen. Water is composed of two parts of hydrogen and one part of oxygen.

All three are colorless, odorless gases.

Oxygen, in uniting with other substances does not burn; but is the medium in and by which other things burn and is called a *supporter* of combustion. It is necessary to our existence, in the air we breathe.

Hydrogen gas is combustible. It burns if oxygen is present,

when brought in contact with flame. It is not poisonous. It will not support life.

Nitrogen neither supports combustion nor burns, and it will not support life. Its chief use in the air seems to be to dilute the oxygen, as an atmosphere of pure oxygen would not serve the purposes it now serves, in an undiluted state.

Salts. All chemical compounds may be called salts although that name is commonly applied only to crystalline compounds.

Acids. There are some salts, having strongly marked properties, which are distinguished by special names, alluding to those properties. Such are the salts of hydrogen. Their most noticeable common property is their sharp taste and from the Latin word acer, meaning sharp, the name acid has been applied to them.

The acids may be sufficiently described by relating their physical properties. Some are fluid and some solid. They are sour to the taste. They are more or less corrosive in their action on the skin and they turn blue litmus paper red. They unite with other elements to form salts.

The acids most commonly met with in medicine are as follows:

Acidum Aceticum $H(C_2H_3O_2)$ Acetic Acid
Obtained by the distillation of wood or by the oxidation of alcohol.
It forms the class of salts called acetates.
Acidum Arsenosum As_2O_3 Arsenous Acid (Present Official Name Arsenic Trioxide)
Obtained by roasting metallic arsenic.
It forms the salts called arsenites.
Acidum Boricum $H_3(BO_3)$ Boric Acid
Obtained from borax (sodium borate).
Acidum Citricum $H_3(C_6H_5O_7)$ Citric Acid
Obtained from lemon or lime juice.
It forms the salts called citrates.
Acidum Hydriodicum (HI) Hydriodic Acid
Obtained by chemical treatment from potassium iodide.
It forms the salts called iodides.
Acidum Hydrocyanicum H(CN) Hydrocyanic Acid (Prussic Acid)
Obtained by decomposing animal substances in the presence of certain chemicals.

It forms the salts called cyanides.
Acidum Hydrochloricum (HCl) Hydrochloric Acid (Muriatic Acid)
Obtained from sodium chloride by the action of sulphuric acid.
It forms the salts called chlorides.
Acidum Nitricum $H(NO_3)$ Nitric Acid (Aqua Fortis)
Obtained from potassium nitrate by the action of sulphuric acid.
It forms the class of salts called nitrates.
Acidum Sulphuricum $H_2(SO_4)$ Sulphuric Acid (Oil of Vitriol)
Obtained by chemical treatment of sulphur.
It forms the salts called sulphates.
Acidum Oxalicum $H_2(C_2O_4)$ Oxalic Acid
Obtained from organic substances by chemical treatment.
It forms the salts called oxalates.
Acidum Tannicum $H(C_{14}H_9O_9)$ Tannic Acid
Obtained from an excrescence growing upon oak leaves.
It forms the salts called tannates.
Acidum Tartaricum $(H_2(C_4H_4O_6)$ Tartaric Acid
Obtained by chemical treatment of potassium bitartrate (cream tartar).
It forms the class of salts called tartrates.

THE SALTS OF THE ALKALI METALS.

The hydrates of the alkali metals, potassium, sodium, ammonium and lithium, although they do not exhibit as well marked properties as the acids do, are sufficiently distinguished among chemicals to be classed by themselves on that account.

While acids turn blue litmus paper red, alkalies restore the color again. Acids and alkalies neutralize each other, so that when the point of neutrality has been reached, they have no effect upon either red or blue litmus. They form salts with all the acids.

Potassium. The element potassium is present in all vegetable structures and when the latter are burned the potassium is converted into potassium carbonate and is separated from the ashes by treatment with water.

Potassium sulphate is also mined in several parts of the world and from these two sources all our various potassium compounds are obtained.

From sodium chloride found in sea water and salt springs all the sodium compounds are obtained.

Ammonia is not an element but a gas composed of nitrogen and hydrogen. It is one of the products obtained during the distillation of coal, in the manufacture of illuminating gas, and the ammonia salts are mostly obtained from this source.

Lithium is found associated with the ores of some of the more common metals.

Besides the salts mentioned as being formed by the acids already named, the following lists of salts are formed either directly or indirectly by the acids following their names.

Carbonates, from Carbonic Acid.
Bicarbonates, from Carbonic Acid and Water.
Bromides, from Hydrobromic Acid.
Hypophosphites, from Hypophosphorous Acid.
Permanganates, from Manganic Acid.

THE OFFICIAL POTASSIUM SALTS ARE:

Potassium.—Acetate.
Bicarbonate.
Bichromate.
Bitartrate.
Bromide.
Carbonate.
Chlorate.
Citrate.
Citrate, Effervescent.
Cyanide.
Ferrocyanide.
Hypophosphite.
Hydroxide. (Caustic Potash.)
Iodide.
Nitrate.
Permanganate.
Sulphate.

THE OFFICIAL SODIUM SALTS.

Sodium.—Acetate.
Arsenate.
Benzoate.
Bicarbonate.
Bisulphate.
Borate.
Bromide.

Carbonate.
Carbonate, Dried.
Chlorate.
Chloride.
Hypophosphite.
Hyposulphite.
Iodide.
Nitrate.
Nitrite.
Phosphate.
Phosphate, Effervescent.
Pyrophosphate.
Salicylate.
Sulphate.
Sulphite.
Phenolsulphonate. (Sulphocarbolate.)

THE OFFICIAL AMMONIUM SALTS.

Ammonium.—Benzoate.
Bromide.
Carbonate.
Chloride.
Iodide.
Valerate.
Salicylate.

THE OFFICIAL LITHIUM SALTS.

Lithium.—Benzoate.
Bromide.
Carbonate.
Citrate.
Citrate, Effervescent.
Salicylate.

The alkaline earths are the native calcium, barium, strontium and magnesium carbonates.

THE OFFICIAL CALCIUM SALTS.

Calcium.—Bromide.
Carbonate (Precipitated).
Chloride.
Hypophosphite.
Phosphate (Precipitated).
Oxide. (Lime.)

THE OFFICIAL STRONTIUM SALTS.

Strontium.—Bromide.
Iodide.
Salicylate.

THE OFFICIAL MAGNESIUM SALTS.

Magnesium.—Carbonate.
Sulphate. (Epsom Salts.)
Sulphate. Effervescent.
Oxide.

CERIUM, ZINC, ALUMINUM.

These metals are all obtained from native ores.

THE OFFICIAL SALT OF CERIUM.

Cerium Oxalate.

THE OFFICIAL SALTS OF ZINC.

Zinc.—Acetate.
Bromide.
Carbonate (Precipitated).
Chloride.
Iodide.
Oxide.
Phenolsulphonate. (Sulphocarbolate.)
Stearate.
Sulphate. (White Vitriol.)
Valerate.

THE OFFICIAL ALUMINUM SALTS.

Aluminum and Potassium Sulphate. (Alum.)
and Potassium Sulphate, Dried.
Sulphate.
Acetate, Solution of (Unofficial.)

LEAD, SILVER, COPPER, BISMUTH.

THE OFFICIAL LEAD SALTS.

Lead.—Acetate. (Sugar of Lead.)
Iodide.
Oxide.
Nitrate.

THE OFFICIAL SILVER SALTS.

Silver.—Nitrate. (Crystallized, Fused or Molded (Lunar Caustic.)
Oxide.
Cyanide.

THE OFFICIAL COPPER SALT.

Copper.—Sulphate. (Blue Vitriol. Blue Stone.)

THE OFFICIAL BISMUTH SALTS.

Bismuth and Ammonium Citrate.
Salicylate.
Subgallate. (Dermatol.)
Subcarbonate.
Subnitrate.

MANAGANESE AND IRON.

THE OFFICIAL SALTS OF MANGANESE.

Manganese.—Dioxide.
Sulphate.
Hyposulphite.

THE OFFICIAL IRON SALTS.

Iron.—Carbonate.
Chloride.
Citrate.
Hydrate. (Arsenical Antidote.)
Hypophosphite.
Iodide.
Iron. (Powdered or Reduced Iron.)
Phosphate.
Sulphate. (Copperas.) (Green Vitriol.)
and Ammonium Citrate.
and Ammonium Tartrate.
and Potassium Tartrate.
and Quinine Citrate.
and Strychnine Citrate.
and Oxide.
and Pyrophosphate.

GOLD AND MERCURY.

OFFICIAL GOLD SALTS.

Gold and Sodium Chloride.

OFFICIAL MERCURY SALTS.

Mercury.—Ammoniated. (White Precipitate.)
Chloride, Corrosive. (Corrosive Sublimate.)
Chloride, Mild. (Calomel.)
Iodide, Red. (Biniodide.)
Iodide, Yellow. (Protiodide.)
Oxide. (Red and Yellow.)

ANTIMONY AND ARSENIC.

OFFICIAL SALTS OF ANTIMONY.

Antimony and Potassium Tartrate. (Tartar Emetic.)

OFFICIAL ARSENIC SALTS.

Arsenic.—Iodide.
Trioxide. (Arsenous Acid.)

QUESTIONS.

Define chemistry.
Define element.
Name the elements, used as such in medicine, and give the symbol.
Describe oxygen, hydrogen, nitrogen.
Define acid.
Exercise in names of acids and the names of their corresponding salts.
What are the names of the alkali metals?
Give sources of potassium, sodium, ammonium and lithium.
Name several of the salts of the several groups of metals.

CHAPTER X.

ORGANIC CHEMISTRY.

UNDER this heading are included some of the products and their derivatives of destructive distillation, and fermentation; the volatile and fixed oils; the glucosides and alkaloids and the products from the animal kingdom.

Organic chemistry treats of those substances which exist naturally within the structures of animal and vegetable organisms. Quite a number of those used in medicine are obtained, directly or indirectly by the destructive distillation of wood, coal or coal oil.

Destructive Distillation. When wood or coal is burned, the mineral substances they contain constitute the ashes. Many things, however, pass up the chimney; charcoal, tar, turpentine, acids, gases and water. If the draught is good, those things escape our notice, but they are perceptible to the senses of sight and smell if the draught is poor. If, instead of burning the wood or coal we place them in a retort and distill them, as we distill water, all those vaporized substances may be condensed and saved. They are very numerous and by treatment with all kinds of chemicals under various and sometimes extraordinary conditions of temperature, vacuity or high pressure, there are formed a great and constantly increasing number of compounds useful in the other arts and sciences as well as in medicine. As the substances distilled in this way are destroyed the process is spoken of as destructive distillation.

Gossypium Purificatum **Purified Cotton (Absorbent Cotton)**

Cotton is the hair from the seed of a plant growing in subtropical countries.

It is treated with potash or soda lye, to free it from oil and adherent impurities. It is then washed with water to remove the lye. Hydrochloric acid is then added to neutralize all traces of potash or soda and finally it is washed in running water to remove all traces of acid. It is then carded.

When a wad of it is compressed in the hand and thrown upon the surface of water, it should immediately absorb the latter and sink. And it should impart neither an acid nor an alkaline reaction to litmus paper.

Pyroxylinum **Pyroxylin (Gun Cotton)**

This product is obtained by the action of nitric and sulphuric acids upon cotton.

By this operation, while the visual properties of the cotton remain about the same, its physical characteristics are considerably changed.

The fibres lose their tenacity and become brittle. Cotton, when ignited, burns slowly, while gun cotton burns instantly and with explosive force.

Cotton is insoluble in alcohol or ether or in a mixture of the two; gun cotton is dissolved by a mixture of the two. When so dissolved in the proportions directed by the Pharmacopœia, it constitutes collodion.

Acidum Oxalicum **Oxalic Acid**

This acid is obtained by roasting together saw dust with potassium and sodium hydrate.

There are numerous substances which resemble each other in appearance, yet differ in their physiological action. Bodies which thus agree in form, but differ in properties, are called isomorphous or equal in form.

To the casual observer, oxalic acid, sulphate of zinc and epsom salt present a similar appearance. People unfamiliar with them have mistaken one for the other and many cases of poisoning in that way are recorded; and in handling epsom

salt, one should always bear these facts in mind and make sure of its identity.

Acidum Aceticum	**Acetic Acid**
Crosotum	**Creosote**

Both of these are products of the destructive distillation of wood, at different temperatures.

Phenol	**Phenol (Carbolic Acid)**

Obtained by destructive distillation, from coal.

The following list of official substances described elsewhere, are directly or indirectly the products of the destructive distillation of coal or of chemical treatment of those products.

Acetanilidum	Acetanilide
Acetphenetidinun	Acetphenetidin (Identical with Phenacetine)
Betanaphthol	Betanaphthol
Cresol	Cresol
Guaiacol	Guaiacol (From Wood Tar)
Guaiacolis Carbonas	Guaiacol Carbonate
Methylthioninæ Hydrochloridum	Methylthionine Hydrochloride (Methylene Blue)
Naphthalenum	Naphthalene
Resorcinol	Resorcinol (Resorcin)
Phenylis Salicylas	Phenyl Salicylate (Salol)
Sulphonethylmethanum	Sulphonethylmethane (Identical with Trional)
Sulphonmethanum	Sulphonmethane (Identical with Sulfonal)

PRODUCTS OF FERMENTATION.

Starch under the influence of moisture and heat is converted into sugar and then into alcohol.

Cane sugar, also, under the influence of fermentation germs, is converted into alcohol.

Malt. When starchy grains, such as rye, corn, barley, etc., are moistened with water and stacked in a warm room, germination or sprouting ensues. At the proper time, the sprouting grain is dried and the starch will be found to have been converted into sugar, the product constituting what is known as malt.

Whiskey. If the malt is mixed with warm water and yeast, fermentation commences and the sugar is converted into an alcoholic liquid, which when separated from coloring matter by distillation constitutes whiskey, containing between 50 to 60 per cent. of alcohol.

Extract Malt. When malt is percolated with water, liquid extract of malt is produced and the thin liquid extract, when evaporated at a low temperature to the consistence of honey, yields the thick malt extract. This is rich in diastase which is capable of digesting starch.

Wine. When grape or other fruit juices containing sugar are exposed to a temperature of 70° to 75° F., the fermentation germs present convert the sugar to alcohol and the product is called wine. The quantity of alcohol present depends upon the quantity of sugar in the juice used, and varies from 5 to 20 per cent. or even more.

Brandy. When wine is subjected to distillation, the alcoholic liquid distilled over is called brandy. It contains about 50 per cent. alcohol. Both brandy and whiskey are colorless when first obtained and are afterwards colored by caromel or other inert substance.

Fractional Distillation. Whiskey consists of about 50 per cent. alcohol and 50 per cent. water. Alcohol distills at a temperature of 170° F. or less—while water requires a temperature of 212° F. So that when whiskey or any other alcoholic liquid is heated to a temperature of 170° F. and not allowed to rise above that degree, the alcohol is distilled while the water is left behind.

Alcohol. In such a manner, alcohol of commerce is obtained from whiskey.

Gin is obtained in the same way whiskey is, from grain, except that juniper berries are added before distillation, and they impart their flavor to the product.

Rum is the alcoholic distillate from fermented molasses.

VOLATILE AND FIXED OILS.

A great many vegetable drugs owe their peculiar odor and flavor to a volatile oil contained in them. The common spices such as cinnamon and clove and the common herbs, peppermint and wintergreen, are familiar examples.

The oil may be separated in a number of ways.

If the drug in question is soft, like orange or lemon peel, it may be crushed out.

In other instances, as in cinnamon bark, the bark is placed in a still with water and the oil and water distill together. The oil being lighter than the water, floats on the surface from whence it is drawn off.

From these volatile oils, the spirits or essences are made by dissolving them in alcohol, and also the aromatic waters by dissolving them in water.

Fixed Oils and Fats. They are called fixed because they are not volatile but permanent on exposure to air. They are derived from both the vegetable and animal kingdoms and some are fluid while others are solid or semi-solid at ordinary temperatures.

Soaps and glycerin are obtained from fats and oils, and to understand how, it must be remembered that fats and soaps and glycerin are well defined salts, capable of being decomposed just as chemicals of ordinary appearance are.

In this connection there are two acids known as oleic and stearic acids and a base known as glyceryl. As a rule, the liquid fats are composed of oleic acid and glyceryl and are glyceryl oleate, while the solid fats are composed of stearic acid and glyceryl and are glyceryl stearate. Glycerin is glyceryl hydrate.

Glycerin. When fats or oils of any kind are heated with potash or soda and water, they are mutually decomposed and

oleate or stearate of potassium and sodium or soaps are formed, together with glyceryl hydrate or glycerin.

Hard soaps are made from soda.

Soft soaps are made from potash.

GLUCOSIDES AND ALKALOIDS.

The glucosides are the active principles of the drugs in which they are found. In appearance they resemble the alkaloids, being crystalline in their nature, and like them they are powerful in their action upon the animal organism.

Digitalin, one of the active principles of digitalis leaves is the most important one.

Alkaloids. The word means like an alkali in allusion to the fact that like alkalies, they form salts with acids.

They are the active principles of the drugs in which they are found. Sometimes a drug contains but one alkaloid; but frequently there are several. All of them act energetically and many of them are violent poisons.

The English names of the glucosides terminate in *i-n*, while those of the alkaloids terminate in *i-n-e*. Such familiar substances as quinine, morphine, codeine, cinchonidine are alkaloids. They are mentioned under the headings of the drugs from which they are derived, in the section on therapeutics.

QUESTIONS.

Define organic chemistry.
Describe the process of destructive distillation.
How is cotton purified?
What is its official name?
How does gun cotton differ from cotton?
What substances resemble oxalic acid?
Name some of the official derivatives of coal tar.
Name the products of the fermentation of starch and sugar.
How are whiskey, brandy and alcohol obtained?
How are volatile oils separated from the drugs containing them?
What are soaps and glycerin obtained from?
Define glucoside.
Define alkaloid.

CHAPTER XI.

ALTERATIVES.

DRUGS which appear to improve the nutritive processes of the body and thereby alleviate or cure diseases of a chronic type are called alteratives.

Iodine and the Iodides	**Cod-liver Oil**
Mercury	**Colchicum**
Arsenic	**Ichthyol**
Gold	

Iodum—Iodine—obtained mostly from the ashes of seaweed. Occurs as bluish-black, dry scales. Dose, grain $\frac{1}{10}$.

Preparations.—Liquor iodi compositus, compound solution of iodine (Lugol's solution). Dose, 3 ♏. Tinctura iodi, tincture of iodine (7 per cent.). Dose, 1½ ♏. Unguentum iodi, iodine ointment. Churchill's tincture of iodine, largely used in gynecology, is composed of iodine 5, potassium iodide 1, water 8 and alcohol 24.

Uses.—Iodine is used principally externally as a counter-irritant, in the form of the tincture. The tincture is also used to some extent as a parasiticide in certain skin affections.

Internally the effect of iodine is obtained chiefly from using the iodides of potash and soda.

Potassii iodidum—potassium iodide—obtained by dissolving iodine in a hot solution of potassa and evaporating; occurs as colorless, cubical crystals or a white granular powder. Dose, 5–60 grs. or more.

Preparations.—Unguentum potassii iodidi, ointment of potassium iodide.

Sodii iodidum—sodium iodide—obtained by dissolving iodine

in a hot solution of soda and evaporating; occurs as colorless, cubical crystals or white granular powder. Dose, 5 to 60 grs. or more.

Uses.—The iodides find their chief use in the late stage of syphilis. The potassium salt is the one commonly given. It is given in solution, often in 50 per cent. solution, one minim representing ½ grain of the drug. The dose is usually gradually increased. In small, long-continued doses the iodides are also given for chronic lead and mercury poisonings, in arteriosclerosis, chronic rheumatism, asthma and enlarged glands.

Hydrargyrum—mercury (quicksilver). Found in native ore as the sulphide; occurs as a heavy silver-white, shining fluid. Preparations in common use prepared from the metal itself are: Unguentum hydrargyni—mercurial or blue ointment. Massa hydrargyri—mass of mercury or blue mass. Dose, 4 grains. Hydrargyri cum creta—mercury with chalk or grey powder. Dose, 4 grains. The compounds of mercury are numerous. Among the most important may be mentioned: Hydrargyri chloridum corrosivum (corrosive sublimate, mercuric chloride). Dose, $\frac{1}{20}$ gr. Hydrargyri chloridum mite (calomel). 1 to 2 grains. Hydrargyri iodidum rubrum (mercury biniodide or red iodide of mercury). Dose, $\frac{1}{20}$ gr. Hydrargyri iodidum flavum (mercury protiodide or yellow iodide of mercury). Dose, $\frac{1}{5}$ grain. Hydrargyrum ammoniatum (ammoniated mercury or white precipitate).

Actions.—Mercury and its salts are readily absorbed by the skin, so that characteristic effects can be produced by inunctions. The metal in the form of unguentum hydrargyri and many of the salts, as the ammoniated mercury and the bichloride, are antiparasitic. Some of the salts, and particularly the bichloride, are actively germicidal. Internally mercury and its salts have a purgative action. The more soluble compounds, as the bichloride and the white precipitate, in toxic doses are marked

gastro-intestinal irritants, causing great pain, vomiting and diarrhea. Mercury or its salts given continuously produces a condition called "mercurialism." In this, there is fetor of the breath, soreness of the gums, and salivation. The gums swell, bleed easily, the teeth are loose and may drop out, ulcers appear, the tongue swells and necrosis of the jaw may follow.

Uses.—Mercury in most any of its forms is used extensively in the treatment of syphilis. Solutions of the salts, particularly the bichloride, are very commonly used in surgery, in sterilizing skin surfaces before operation. Calomel and blue mass are reliable purgatives. Unguentum hydrargyri and ointment made with the ammoniated mercury are much used in parasitic skin affections.

Arsenum—arsenic. Arsenous acid only, and its salts are used in medicine.

Arsenic trioxidum—arsenous trioxide. Arsenous acid or white arsenic is obtained by roasting arsenical ores. It occurs as an opaque, white powder, or as irregular masses which may be either amorphous, transparent and colorless, or crystalline and opaque or white. Dose, $\frac{1}{60}$ to $\frac{1}{10}$ grs.

Preparations.—Liquor potassii arsenitis—solution of potassium arsenite (Fowler's solution), which contains 1 per cent. arsenous acid. Doses, 1 to 10 ♏. Sodii arsenas—sodium arsenate—occurring in colorless, transparent crystals. Dose. $\frac{1}{80}$ to $\frac{1}{10}$ gr. And liquor sodii arsenatis—solution of sodium arsenate (Pearson's solution) also 1 per cent. Dose, 1–10 ♏.

Arseni iodidum—arsenous iodide—occurs as orange-red, crystalline masses or scales. Dose, $\frac{1}{80}$ to $\frac{1}{10}$ gr.

Preparations.—Liquor arseni et hydrargyri iodidi—solution of arsenous and mercuric iodides (Donovan's solution) containing 1 per cent. of each. Dose, 1–10 ♏.

Actions.—When applied to denuded surfaces and mucous membranes, arsenic trioxide has a slow caustic action. Taken

in toxic doses any of the arsenic preparations produces an intense gastro-enteritis with symptoms closely resembling those of Asiatic cholera. In small doses, arsenic is a gastric stimulant, increases appetite and digestion, and improves nutrition generally.

Uses.—It is given in the anæmias—often combined with iron—in chronic malaria with enlargement of liver and spleen, in some forms of chronic joint disease, in chronic skin affections and in various other chronic conditions.

Aurum—gold—is administered only as the chloride. *Auri et sodii chloridum*—gold and sodium chloride; occurs as an odorless, orange-yellow powder. Dose, $\frac{1}{80}$ to $\frac{1}{10}$ gr.

Actions.—Small doses are supposed to improve appetite and digestion. Large doses produce poisoning similar to that of mercuric chloride.

Uses.—Similar to that of the iodides. Much less frequently used than formerly.

Oleum morrhuae—cod-liver oil—is obtained from the fresh livers of the common cod-fish. It is a pale yellow liquid, having a slightly fishy taste and odor. Dose, 1 to 4 drams.

Preparations.—Emulsum olei morrhuæ—emulsion of cod-liver oil. Dose, 1 to 2 drams.

Actions.—Externally the oil is emollient to the skin, and is absorbed by it. Internally when it can be borne by the stomach at all, it is readily absorbed and acts as an excellent food.

Uses.—In wasting diseases in both children and adults it can be given by inunctions. The disagreeable taste can be partly disguised by mixing with thick malt extract or by making an emulsion. In all chronic conditions marked by poor nutrition, the oil is a useful remedy.

Colchicum—meadow saffron—is a plant growing in central and southern Europe. The corm and the seed are used in medicine. From the corm comes the extractum colchici cormi, dose gr. i;

from the seed fluidextractum, dose 1 to 5 ♏; tinctura colchici seminis, dose 10 to 30 ♏ and vinum colchici seminis, dose 10 to 30 ♏. An active principle, colchicine, is also used in doses of $\frac{1}{125}$ gr.

Actions.—In large doses, colchicum is a gastro-intestinal irritant. It is supposed to increase the flow of bile.

Used.—Almost exclusively in the treatment of gout.

Ichthyol (unofficial). Ichthyol is obtained by distilling a bituminous quartz, containing fossil remains of fish, with concentrated sulphuric acid. It occurs as a reddish-brown syrupy liquid. Dose, 10–20 ♏.

Actions.—Ichthyol is slightly antiseptic; mildly irritant to the skin. Applied externally it is said to cause the absorption of inflammatory products.

Uses.—It is used chiefly in ointments in from 20–50 per cent. strength, as a local application in chronic skin affections and erysipelas. It is given internally in capsules or pills for chronic intestinal indigestion and in various chronic diseases—including rheumatism and syphilis.

QUESTIONS.

Define the term alterative.
Name all the alterative drugs.
How does iodine occur?
Name the official preparations.
What are the uses of the iodides?
Latin name of mercury.
Name the preparations of metallic mercury.
Give the action and uses of mercury and its salts.
Name the official preparations of arsenic and their doses.
Give its action and uses.
What is ichthyol obtained from?
What is its action, use and dose?

CHAPTER XII.

ANESTHETICS.

THESE are of two kinds—local and general.

Local anesthetics are agents which diminish the sensibility of the terminations of sensory nerves.

The chief ones are:

Cocaine	**Carbolic Acid**
	Extreme Cold

General anesthetics are agents which cause a total loss of consciousness and the pain sense and the abolition of reflexes. Those most used are:

Ether	**Nitrous Oxide**
Chloroform	**Ethyl Chloride**
Erythroxylon	

Coca—coca—of which cocaine is an alkaloid, comes from the leaves of a tree growing in South America. It must not be confounded with cocoa, a fruit from which we make the drink of that name.

Preparations.—Fluidextractum cocæ, dose 30 ♏; vinum cocæ, dose 1 to 4ʒ, and cocaine, dose $\frac{1}{8}$ to 2 grs.

Actions.—The action of coca is chiefly that of its alkaloid, cocaine.

Cocainæ hydrochloridum—cocaine hydrochloride, dose $\frac{1}{8}$ to 2 grs. On mucous membranes or subcutaneously it produces complete local anesthesia. Because of this action it will sometimes allay the vomiting of gastric irritability. A solution of cocaine instilled into the eye produces anesthesia of the cornea and conjunctiva and dilatation of the pupil. Cocaine

stimulates the higher centers of the brain; muscular power is increased. Large doses cause an exaggeration of reflexes and finally convulsions and collapse. Death takes place from failure of respiration. Such severe symptoms have arisen from injections of cocaine into the urethra or under the skin. In chronic poisoning by cocaine, the mental faculties are quickly affected. The patient is troubled with unpleasant delusions, the feeling that worms are crawling beneath the skin being a very common one.

Uses.—Solutions of cocaine of 5 to 10 per cent. in strength may be used beneath the skin for local anesthesia, or applied to mucous membranes in operating on the eye, nose, throat or ear, urethra, vagina or rectum. Schleich's solutions are weak solutions of cocaine, morphine hydrochloride and sodium chloride in sterilized distilled water or saturated boric acid solution. When these are used for skin infiltration, the resulting anesthesia is largely mechanical—from the distension of the tissue by the fluid.

Phenol—carbolic acid—is obtained from coal-tar by distillation. It occurs in two forms, the crude which is a black oily liquid, having a distinct tarry odor; and the pure, which is a colorless or slightly pinkish, transparent, oily liquid having the characteristic odor of carbolic acid. When free from water and in a moderately cool atmosphere, the pure acid forms masses of colorless or pinkish needle-like crystals.

Preparations.—Glyceritum phenolis—glycerite of phenol. Dose, 2 to 5 ♏; and unguentum phenolis—ointment of phenol—5 per cent.

Actions.—Phenol is a powerful antiseptic. Applied to the skin in weak or moderately strong solutions it produces a feeling of numbness; concentrated, it acts as a caustic. Internally in concentration the acid forms white eschars in the mouth, esophagus and stomach, and causes a violent gastro-enteritis.

It is generally rapidly fatal. In doses of ½ to 2 ♏ it will often relieve the vomiting of gastric irritation. Alcohol neutralizes the effect of carbolic acid whether taken internally or applied externally.

Uses.—Very largely as an antiseptic in strengths of from 1 to 200 to 1 to 20. Its anesthetic properties are rarely made use of. It is given in certain cases to relieve vomiting.

Extreme cold is often made use of, to produce anesthesia for minor operations. A mixture of salt and ice was formerly employed, but at present the cold produced by the evaporation of ethyl chloride applied in a fine spray is most commonly used.

Ethylis chloridum—ethyl chloride—is a colorless, very volatile liquid. It is supplied commercially in glass or metal tubes having a finely perforated nozzle. When applied to the skin or mucous membranes in a fine spray the part is frozen by the rapid evaporation, producing sufficient anesthesia for minor surgical operations. Recently it has been used to some extent as a general anesthetic.

Æther—sulphuric ether—is a colorless, volatile, very inflammable liquid, obtained by distilling alcohol with sulphuric acid. Its vapor is heavier than air so that it may be used safely in rooms where there are fire lights if the lights are high. Dose, 5 to 60 ♏.

Actions.—If applied to the skin and evaporation prevented, ether is irritant. Taken internally or inhaled in moderate doses, it is a stimulant to the heart and respiration. In excessive doses, however, respiration is paralyzed and the heart depressed. If inhaled in sufficient amount it produces general anesthesia with a gradual lessening and final abolition of all reflexes. Ether is a prompt carminative, causing dilatation of the gastric vessels, and increased secretion of the glands.

Uses.—Ether is used largely as a general anesthetic by in-

halation. It is given internally in colic and flatulency, and, because of its stimulating properties, is employed in fainting, palpitation and heart failure.

Chloroformum—chloroform—is a heavy, clear, colorless, non-inflammable liquid. It is obtained by distilling alcohol with chlorinated lime. Dose, 2 to 20 ♏.

Preparations.—Aqua chloroformi—chloroform water (½ of 1 per cent.). Dose, 1 to 4 fl. dr. Emulsum chloroformi—emulsion of chloroform (4 per cent.) Dose, 1 to 4 fl. dr. Spiritus chloroformi—spirits of chloroform (6 per cent.). Dose, ½ to 1 fl. dr. Linimentum chloroformi—chloroform liniment—which consists of ⅓ chloroform and ⅔ soap liniment.

Actions.—If rubbed into the skin, chloroform produces heat and redness. If confined under a watch-glass or close bandage, it will cause a blister. Internally it is irritant to the mucous membrane. Small doses are sedative to the nervous system. Given by inhalation, chloroform produces anesthesia. Its use is attended with much more danger than is the use of ether, because of its depressing effect on the heart. The anesthesia is quieter and there is much less vomiting afterwards.

Uses.—Principally as an anesthetic. Chloroform water is much used as a vehicle to disguise the taste of various drugs. Chloroform or the spirits of chloroform is often added to cough mixtures for its sedative effect. Drop doses of chloroform in water or on sugar will often relieve the vomiting from an inflamed stomach.

Nitrous oxide—nitrogen monoxide or laughing gas—is the oldest known general anesthetic. At ordinary temperature and pressure it is a colorless, almost odorless gas, of a sweetish taste. Commercially it is supplied in metal cylinders into which it has been forced under pressure.

Actions.—Inhaled through a close fitting mask it produces complete unconsciousness in from ½ to 3 minutes; the state

lasting, however, for a very short time. During anesthesia, the patient's face is bloated and sometimes intensely livid.

Uses.—Nitrous oxide is the safest of the general anesthetics and is, therefore, used extensively in dentistry and for short surgical procedures. It is often given also as a preliminary to the administration of ether.

Ethyl chloride is described under local anesthetics.

QUESTIONS.

Define anesthetic.
Define local anesthetic.
Name all the drugs used as anesthetics.
What is cocaine the active principle of?
Describe its action and uses.
Give the action of carbolic acid.
Action of ether, of chloroform.
Dose of each.

CHAPTER XIII.

ANT-ACIDS.

DRUGS which will counteract acidity in the stomach are called ant-acids.

Sodium Bicarbonate	**Magnesia**
Lime Water	**Ammonia**

Sodii bicarbonas—sodium bicarbonate (baking soda)—is prepared by passing carbon dioxide through a solution of sodium carbonate. This familiar substance usually comes to us in the form of a fine white powder. Dose, 5 to 60 grs.

Actions.—Baking soda excites a flow of gastric juice, if given before a meal. Given after a meal it neutralizes the acids present in the stomach. In solution, applied externally it will often relieve itching.

Uses.—Chiefly in gastric fermentation to relieve excessive acidity.

Liquor calcis—solution of lime—lime water—is made by dissolving slaked lime in water. It contains about 12 grains of calcium hydroxide to the pint. Dose 1 to 8 drams. Lime in this form is readily decomposed by exposure to the air. Lime water is easily prepared by slaking a piece of quicklime as large as an egg by pouring a cupful of water upon it, and allowing it to stand until the heat which is generated has passed off. The water is then poured off from the milky sediment and from a quart to a gallon of fresh water is added. It is unnecessary to be exact as to the amount, for the water will only dissolve a limited quantity. Allow the coarse lumps to settle to the bottom and pour off the milky fluid. This latter as soon as it has settled clear is lime water. It must not be filtered, for the white sedi-

ment of undissolved lime is necessary for keeping up the strength of the solution.

Actions.—Externally lime water is mildly astringent. Internally it is astringent and ant-acid. It also acts as a gastric sedative.

Uses.—Lime water will sometimes relieve the itching of certain skin affections. A mixture of lime water and linseed oil, called carron oil, has been much used as a dressing for burns. Internally lime water is used to relieve vomiting, is given with milk to render it slightly alkaline, and as a mild ant-acid. Lime water with the sediment given in oxalic acid poisoning, will neutralize the poison by forming calcium oxalate which is insoluble.

Ammonium—ammonia—occurs in the form of a gas and is one of the products of the distillation of coal. All the various salts of ammonia are made from this gas.

Preparations.—Aqua ammoniæ fortior (stronger ammonia water) which is a 28 per cent. solution by weight of the gas dissolved in water. Spiritus ammoniæ (spirit of ammonia) which contains 10 per cent. of the gas by weight dissolved in alcohol. Dose, 10 to 60 ♏. Aqua ammoniæ (ammonia water or ammonia) which contains 10 per cent. of the gas dissolved in water. Dose, 10 to 20 ♏. Ammonii carbonas (ammonium carbonate, hartshorn or sal volatile). Dose, 2 to 15 grs. Spiritus ammoniæ aromaticus (aromatic spirits of ammonia). Dose, ½ to 2 fl. dr. Ammonii chloridum (ammonium chloride or sal ammoniac). Dose, 1 to 30 grs. Liquor ammonii acetatis (solution of ammonium acetate or spirit of mindererus). Dose, 2 to 8 fl. dr.

Actions.—Externally, solutions of ammonia produce redness and heat, and if very strong will cause pain and burning. If ammonia is inhaled, the pulse and respiration are stimulated. Internally the water, the carbonate and the spirit act as alkalies and hence are ant-acid. All the preparations of ammonia and especially the carbonate and the chloride are stimulant expectorants.

The spirit of mindererus increases perspiration and the output of urine.

Uses.—The ammonia preparations are perhaps more widely used as stimulant expectorants, cardiac stimulants and diuretics, than as ant-acids. An unofficial compressed tablet, known as soda mint, is the most popular form in which ammonia is used for its ant-acid properties. The soda-mint tablet is a mixture of ammonium carbonate, sodium bicarbonate and oil of spearmint.

Magnesium oxide (magnesia) and magnesium carbonate are both described under cathartics.

ANTHELMINTICS.

Agents used to kill or expel parasitic worms of the intestinal tract.

Santonin
Chenopodium
Spigelia
Pepo
Aspidium
Pomegranate
Turpentine
Quassia
Tannin

Santonin is a neutral principle from santonica (Levant worm-seed), the dried unexpanded flower head of a plant growing in Asia. Dose, ¼ to 1 gr.

Actions.—Santonin removes the round worms which sometimes inhabit the small bowel. Even small doses turn the urine a saffron color and may affect the eyes, giving everything a yellow hue. Large doses may cause epileptiform convulsions.

Uses.—Santonin is given for round worms, in powder form, usually with sugar of milk. The dose should be followed in 2 or 3 hours by a purge.

Chenopodium—American worm-seed—is the fruit of a plant growing in the West Indies, Central America, and the United States. Dose 10 to 20 grs.

Preparations.—Oleum chenopodii—oil of chenopodium—obtained by distillation. Dose, 2 to 10 ♏.

Actions.—Like santonin, chenopodium acts on the round worm.

Uses.—The oil may be given in capsules or in emulsion, or simply dropped on sugar. The dose should be repeated before meals, for two days, then followed by a cathartic.

Spigelia—pink root—is the root of a plant growing in our southern states. Dose, ½ to 2 dr.

Preparations.—Fluidextractum spigeliæ—fluidextract of spigelia. Dose, ½ to 2 fl. dr.

Actions.—Like the above two drugs, it removes round worms. Large doses are toxic, producing various cerebral symptoms—even stupor and convulsions.

Uses.—As an anthelmintic, it should be given with or followed shortly by a purge. The fluidextract is the form usually given. It is frequently combined with senna.

Pepo—pumpkin seed—the seed of the common pumpkin. Dose, 1 to 3 oz.

Actions.—Pepo is effective against the tape-worm.

Uses.—It is best given in emulsion and should be followed in a few hours by a purge. As a household remedy it may be prepared as follows: Bruise, 2 oz. of the fresh seed in a mortar with 8 oz. of water until the husks are loosened and an emulsion formed. Strain and take the whole amount fasting.

Aspidium—male fern. The root is used medicinally. Dose, ½ to 1 dr.

Preparations.—Oleoresina aspidii—oleoresin of aspidium. Dose, ¼ to 1 fl. dr. This is the preparation of the drug always given.

Actions.—Aspidium is a direct poison to the tape-worm. It must be used with caution because even moderately large doses sometimes cause nausea, vomiting, purging, abdominal pain, muscular weakness, coma and collapse.

Uses.—In the treatment of tape-worm it is given in capsules, emulsion or with some simple bitter like gentian. Castor oil or other oils should not be given as cathartics after aspidium because of the danger of increasing absorption and thus causing toxic symptoms.

Granatum—pomegranate—is the bark of the root and stem of a small tree growing in subtropical countries. Dose, ½ to 1½ dr. Its anthelmintic action is supposed by some to be due to pelletierine, a mixture of its active principles.

Preparations. — Pelletierinæ tannas — pelletierine tannate. Dose, 3 to 5 grs.

Actions.—Pomegranate itself is apt to produce vomiting and purging, and on this account is seldom or never given. Pelletierine on the other hand has no such unpleasant effects and is one of the most reliable anthelmintics.

Uses.—Pelletierine is given to kill tape-worm. It is usually administered in capsules and should be preceded and followed by a purgative.

Terebinthina—turpentine—is an oleo-resin obtained from several varieties of pine. From this is obtained by distillation, oleum terebinthinæ—oil of turpentine or spirit of turpentine—which is a thin colorless liquid having a characteristic odor and taste.

Preparations.—Oleum terebinthinæ rectificatum—rectified oil of turpentine. Dose, 5 to 30 ♏. Emulsum olei terebinthinæ—emulsion of oil of turpentine. Dose, 1 fl. dr. Linimentum terebinthinæ—turpentine liniment.

Actions.—Externally, turpentine acts as a counterirritant. Internally it causes a feeling of warmth and stimulates the heart reflexly. It is carminative and in large doses cathartic. It is irritating to the genito-urinary tract. Moderate doses may cause hematuria or even complete suppression. In doses of from 1 to 8 dr. it is anthelmintic.

Uses.—Externally as a counterirritant. Internally it may be given in emulsion or on lump sugar as a carminative. Because of its irritating qualities, it is a valuable addition to enemata. The large dose required in the treatment of tapeworm, is apt to produce dangerous symptoms. For this reason castor oil should be combined with it or given promptly afterward.

Quassia—quassia—is the wood of a tree growing in Jamaica.

Preparations.—Extractum quassiæ—extract of quassia. Dose, ½ to 3 gr. Fluidextractum quassiæ—fluidextract of quassia. Dose, ¼ to 1 fl. dr. Tinctura quassiæ—tincture of quassia. Dose, ½ to 2 fl. dr.

Actions.—By mouth, quassia acts as a bitter tonic. Injected per rectum it is efficient against seat-worms.

Uses.—The tonic effect of quassia may be obtained by drinking water allowed to stand for several hours in a cup turned out of quassia wood. In the treatment of seat-worms, half a pint of the infusion is injected into the rectum and retained for several minutes. The infusion is made by pouring a pint of hot water over an ounce or more of the wood and allowing it to stand until cold.

Acidum tannicum—tannic acid or tannin—is a yellowish-white substance obtained by treating nut-gall (an excrescence growing upon the leaves of certain varieties of oak) with ether and water. It is the active principle common to almost all astringent vegetable drugs.

Preparations.—Collodium stypticum—styptic collodion. Glyceritum acidi tannici—glycerite of tannic acid. Unguentum acidi tannici—ointment of tannic acid.

Actions.—Locally tannic acid causes a contraction of tissues and constriction of blood-vessels, and is therefore astringent and hemostatic.

Uses.—Chiefly as an astringent in the form of the glycerite,

to relaxed or chronically inflamed tissues. In the form of a weak infusion with glycerine and water it is effective against seat-worms.

QUESTIONS.

Define ant-acid.
Name the ant-acid drugs, and give their actions and doses.
What is spirit of turpentine obtained from?
What is its official name and dose as an anthelmintic?
In what forms is tannic acid used internally?

CHAPTER XIV.

ANTISEPTICS.

DRUGS which prevent the growth of or destroy the germs of disease, putrefaction or fermentation.

Bichloride of Mercury	**Alcohol**
Boric Acid	**Hydrogen Peroxide**
Creolin	**Potassium Permanganate**
Lysol	**Carbolic Acid**
Liquor Cresolis Compositus	

Hydrargyri chloridum corrosivum—corrosive mercuric chloride—bichloride of mercury—occurs as colorless crystals or crystalline masses. It is soluble in water, alcohol and ether. For use in making solutions it usually comes in tablet form, the tablets often containing coloring matter to guard against poisoning. Dose, $\frac{1}{60}$ to $\frac{1}{10}$ gr.

Actions.—Bichloride is a powerful germicide. Even the weakest solutions will inhibit the growth of micro-organisms. Taken internally in poisonous doses it causes violent pains in the stomach, vomiting, purging, collapse and death.

Uses.—As an antiseptic for cleansing hands, the surfaces of the body and various utensils, it is used in strengths of from 1 to 10,000 to 1 to 1000. Because of the amalgam formed it should not be used on metal. It is sometimes the form of mercury given in the primary and secondary stages of syphilis.

Antidotes.—The bichloride forms an insoluble compound with albuminous substances. In case of poisoning, therefore, the whites of several eggs should be given and the stomach pump used.

Acidum boricum—boric or boracic acid—is found native in Tuscany, but is largely produced by the action of hydrochloric acid on borax. It occurs as colorless scales

having a pearly lustre, or in fine white powder. One part in 25 of water makes a saturated (4 per cent.) solution. Dose, 5 to 15 grs.

Preparations.—Glyceritum boroglycerinum—glycerite of boroglycerine. Unguentum acidi borici—ointment of boric acid (10 per cent.). Sodii boras—sodium borate or borax. Dose, 5 to 30 gr.

Actions.—Boric acid is mildly antiseptic and mildly astringent. Taken internally, borax and boric acid are excreted mainly by the kidneys. The former renders the urine alkaline, the latter, acid.

Uses.—Borax and boric acid are useful where mildly antiseptic, cleansing solutions are needed as in the eye, the nasal cavities or the bladder. They are both used fraudulently to a large extent in the preservation of food-stuffs. Boric acid enters into the well-known Thiersch solution, which consists of boric acid 12 parts, salicylic acid 2 parts and water 1000.

Creolinum—creolin (not official)—is derived from the dry distillation of coal. It is a dark brown, syrupy liquid, having a characteristic odor. It forms a turbid, milky mixture with water.

Actions.—Creolin is a fairly powerful, non-irritating antiseptic, less poisonous than carbolic acid.

Uses.—As an antiseptic in strengths of from 2 per cent. up.

Lysolum—lysol, crude cresylic acid (not official)—is derived from tar oil by dissolving in fat and saponifying with alcohol or by mixing with solution of soap. It is a brown, oily looking, clear liquid having a characteristic, disagreeable odor; soluble in water in all proportions and giving a clear, frothy saponaceous solution.

Actions.—It is mildly antiseptic.

Uses.—As an antiseptic, in solutions of from ½ to 2 per cent. in strength. Because of its lubricating properties it is especially useful in gynecology and obstetrics.

Liquor cresolis compositus is an official form of the above two and used for the same purposes.

Alcohol—alcohol, ethyl alcohol, spirit of wine—is obtained by distilling whiskey. The common alcohol is spoken of as 95 per cent., though it really contains but about 90 per cent. of ethyl alcohol, the remaining 10 per cent. being water. Alcohol is a colorless, volatile liquid having an agreeable odor and burning taste.

Preparations.—Alcohol dilutum—dilute alcohol—proof spirit by mixing equal parts of alcohol and water—containing about 40 per cent. ethyl alcohol and 60 per cent. water. Alcohol absolutum—absolute alcohol—which contains not more than 1 per cent. of water.

Actions.—Alcohol has marked antiseptic properties and these are most noticeable in solutions of from 50 to 70 per cent. Applied to bruises or other seats of inflammation, it makes an excellent evaporating lotion. It hardens tissue by extracting water from it. Internally it acts at first as a stimulant to the nervous system, later it paralyzes. Large doses are poisonous.

Uses.—It is used to a considerable extent in surgery in solutions of from 50 to 70 per cent. strength as an antiseptic wash for the hands of the operator and the skin surface at the site of operation. Internally alcohol is usually given in the form of brandy or whiskey.

Aqua hydrogenii dioxidi—solution of hydrogen dioxide or peroxide—a slightly acid, odorless and colorless solution of hydrogen dioxide gas in water, having a 3 per cent. strength. The solution is not permanent but is made so by a small percentage of acetanilid. It is kept best in tightly stoppered bottles in a cool place.

Actions.—When brought in contact with oxidizable substances, viz., pus or blood, it gives up its oxygen readily with

much frothing. It is a non-poisonous, fairly powerful antiseptic. Internally it has little or no value.

Uses.—It is of considerable value in surgical dressings, particularly in cleaning out fistulous tracts. It is sometimes used as an application to the membrane in diphtheria; and often as a mouth wash or gargle.

Potassii permanganas—potassium permanganate—occurs as slender, dark purple crystals. Dose, ½ to 2 grs.

Actions.—The salt in solution is readily decomposed by all organic matter, giving up oxygen. Because of this action it is antiseptic and deodorant.

Uses.—It is used principally in surgery as an antiseptic wash for the hands of the operator and to cleanse the field of operation. The brown stain resulting is removed with a solution of oxalic acid. It also finds considerable use in solutions of from 1 to 500 to 1 to 5000 for irrigating the bladder, urethra and vagina, and for stomach washing. A well-known solution, Condy's fluid, contains 8 gr. of the salt to 1 oz. of distilled water. Internally it is recommended in the dyspepsia and flatulence of the obese, and for the reduction of fat. It is recommended as a remedy for snake-bite, and because of its oxidizing effect on morphine, as a remedy in poisoning with that substance, in which case it should be used as a stomach wash. Under its administration the menstrual flow is said to be increased.

ANTIPERIODICS.

Drugs which lessen or prevent the regularly recurring paroxysms of a disease are called antiperiodics.

Cinchona **Eucalyptus**
Arsenic

Cinchona—Peruvian bark—the bark of a tree native to South America and cultivated in India. Dose, 10 to 60 grs.

Preparations.—Fluidextractum cinchonæ—fluidextract of cin-

chona. Dose, 10 to 60 ♏. Tinctura cinchonæ—tincture of cinchona. Dose, ½ to 2 fl. dr. Tinctura cinchonæ compositæ—compound tincture of cinchona.

The action of cinchona is due almost entirely to its alkaloids, of which there are four: quinine, quinidine, cinchonine and cinchonidine; of these quinine is the best known and most important. The dose of the various alkaloids is about the same, viz.—1 to 20 gr.

Quinina—quinine—occurs as a white flaky powder—odorless and almost tasteless. It is slightly soluble in water; more soluble in alcohol, ether and chloroform, and dilute acids. Dose, 1 to 20 grs.

The various salts of quinine are more soluble in water than quinine itself, and of these quinine bisulphate is the most soluble. Quinine sulphate is the best known salt and occurs in white silky needles, cohering together in soft masses. Quinine hydrobromide, quinine hydrochloride and quinine salicylate are other official salts. The cinchoninæ sulphas (cinchonine sulphate) and cinchonidinæ sulphas (cinchonidine sulphate) are salts of the alkaloids of those names. They are not as widely used as the quinine salts.

Actions.—The action of cinchona and its alkaloids may be considered together, that of quinine being typical of the rest. Quinine solutions have considerable antiseptic power. Internally in the stomach it acts as a vegetable bitter; absorbed into the blood it destroys the organism causing malaria (Plasmodium malariæ) and so relieves the paroxysms. Even small doses may cause fullness in the head, ringing in the ears, deafness, dizziness and disturbances of taste, smell and vision. These symptoms commonly follow large doses and the condition is spoken of as cinchonism. Quinine will reduce temperature whether or not of malarial origin. It acts to some extent on the uterus, causing contractions of that organ.

Warburg's tincture, sometimes called "tinctura antiperiodica," is a preparation at one time much used in the treatment of malaria. Its action is chiefly due to its containing 9½ grs. of quinine to the ounce. Dose, 1 to 4 drams.

Uses.—Quinine finds its chief use in the treatment of malaria. In that disease it is specific, and will surely kill the malarial parasite. It is given sometimes to reduce temperature not caused by malaria. In solution or in pill form in small doses it forms an excellent bitter tonic. In solution also it has been used in the treatment of certain forms of dysentery—given as an enema with the idea of destroying the infecting agent.

Arsenic is described under alteratives.

Eucalyptus—eucalyptus—the dried leaves of a tree growing in Australia and subtropical countries. Dose, 30 gr.

Preparations.—Fluidextractum eucalypti—fluidextract of eucalyptus. Dose, 30 ♏. Oleum eucalypti—oil of eucalyptus. Dose, 8 ♏. Eucalyptol, obtained from the volatile oil. Dose, 5 ♏.

Actions.—Externally eucalyptus is an irritant. Internally it is stomachic, expectorant and a stimulant to the genito-urinary tract. It has well marked antiseptic properties. By many, it was for a long time deemed equal to quinine in the treatment of malaria. At present, however, its antiperiodic properties are considered of very slight importance.

Uses.—Principally in solution as a mild antiseptic. It may be given as an antiseptic to the alimentary canal and in chronic catarrhal affections of the bronchial and genito-urinary mucous membranes.

QUESTIONS.

Define anthelmintic.
Name the anthelmintic drugs.
Action and dose of santonin.
How is pepo generally used?

Latin name, action, use, dose and usual method of administration of male fern.
Active principle of granatum.
Define antiseptic.
Name the antiseptic drugs.
Give the official names of corrosive sublimate.
What is its action and uses?
What is its antidote?
Name the official preparations of boric acid.
Name the three official forms of alcohol.
Give its action and uses. Dose.
What is the action of hydrogen dioxide?
Name the uses and dose of potassium permanganate.
Define antiperiodic.
Name the antiperiodic drugs.
What are the active alkaloids of cinchona?
Name the salts of quinine.
Give actions of cinchona and its alkaloids. Dose of quinine.
Give action of eucalyptus and dose of its two derivatives.

CHAPTER XV.

ANTIPYRETICS.

DRUGS or agents used to reduce an elevated bodily temperature.

Antipyrin	**Aspirin**
Acetanilid	**Phenacetin**
Salicylic Acid	**Quinine**

Cold

Antipyrina—antipyrin—one of the coal-tar derivatives, occurs as a colorless, almost odorless crystalline powder, having a slightly bitter taste and freely soluble in water. Dose, 3 to 20 grs.

Actions.—In large doses antipyrin depresses the heart. It acts as a sedative in nervous affections and is useful in relieving nerve pain. It rapidly reduces an elevated temperature.

Uses.—It is largely used in the various neuralgias, and to reduce temperature. Some persons are unpleasantly affected by it, so that it should be used with proper care.

Acetanilidum—acetanilid—antifebrin—is one of the coal-tar derivatives and occurs as an odorless, colorless, crystalline powder. It is only slightly soluble in water, but freely soluble in alcoholic liquids. Dose, 2 to 5 grs.

Preparations.—Pulvis acetanilidi compositus—compound acetanilid powder (containing 7 parts acetanilid, 10 of caffeine and 20 of sodium bicarbonate). Dose, 7½ grs.

Actions.—Large doses are depressing to the heart. The composition of the blood is changed so that the skin and mucous membranes assume a peculiar bluish (cyanotic) hue. The vessels in the skin are dilated and sweating results. This is more particularly noticeable with high temperatures. Acetanilid is

sedative to the nervous system and like antipyrin will relieve nerve pain.

Uses.—Acetanilid is used most frequently for the relief of pain, as in neuralgia, dysmenorrhea, migraine, headache in general and rheumatism. It also ranks high among drugs as a reducer of temperature. Like antipyrin it must be used with caution, as little as five grains having been known to produce fatal results.

Acetphenetidinum—phenacetin—is one of the coal-tar products, occurs as a white, crystalline powder, odorless and tasteless. It is given best as a dry powder, in capsules or in tablet form, being only slightly soluble. Dose, 5 to 10 grs.

Actions.—Acetphenetidine has only a slight depressing effect on the heart. It is sedative to the nervous system, will relieve pain, and is a powerful agent in the reduction of an elevated temperature.

Uses.—It is used in much the same way as antipyrin and acetanilid, but being less depressing can be given with less caution.

Acidum salicylicum—salicylic acid—is derived chiefly from the action of carbon dioxide on sodium carbolate. It occurs, however, naturally in combination in various plants (wintergreen and birch). It comes as a fine, white crystalline powder, odorless, but having a sweetish taste. It is only slightly soluble in water. Dose, 5 to 60 grs.

Preparations.—Sodii salicylas—sodium salicylate. Dose, 5 to 60 grs. Lithii salicylas—lithium salicylate. Dose, 1 to 15 grs. Strontii salicylas—strontium salicylate. Dose, 5 to 60 grs. Aspirinum—aspirin. Not official. Dose, 5 to 60 grs. Phenylas salicylas—phenyl salicylate (salol). Dose, 3 to 5 grs.

Actions.—Externally salicylic acid will soften the skin. It is strongly antiseptic while its various salts are less so. Internally salicylic acid is irritating to the stomach, especially if given in powder form. Salicylic acid and the salicylates will increase the flow of bile and readily reduce elevated temperature.

Sometimes, even in medicinal doses, salicylic acid and its salts will produce deafness and ringing of the ears. Large doses continued may cause violent delirium.

Uses.—Salicylic acid and the salicylates are given largely in rheumatism to reduce the temperature and relieve the pain. They are useful also as intestinal and urinary antiseptics.

Oleum gaultheriæ, oil of gaultheria or oil of wintergreen; oleum betulæ, oil of betula or oil of sweet-birch and methylis salicylas, methyl salicylate or synthetic oil of wintergreen are practically identical and are given for the same things and in the same way as salicylic acid, in doses of from 1 to 5 ♏. Aspirin is a chemical derivative of salicylic acid. It is given in doses of from 15 to 60 grs., and is said to be less irritating to the stomach than the acid and its salts. Salol, another chemical derivative of salicylic acid is similar to it in its action, but is also less irritating. It is used largely as an intestinal antiseptic, being split up in the intestine into carbolic and salicylic acids.

Quinine is described under antiperiodics.

Cold for the reduction of temperature is applied chiefly by means of the tub or sponge bath or by the wet pack. Alcohol in the form of whiskey or brandy is generally given before, sometimes also after the application of the cold, and an ice cap is kept on the head. Of all methods for reducing temperature this is perhaps the most effective and surely the safest, because we have left none of the depressing effects of a drug.

QUESTIONS.

Define antipyretic.
Name the antipyretic drugs.
Origin, uses and doses of antipyrin and acetanilid.
Action, use and dose of phenacetin, of salicylic acid and the salicylates.
How is cold best applied as an antipyretic?

CHAPTER XVI.

ANTISPASMODICS.

DRUGS or agents which relieve the tendency to spasmodic attacks.

Chloral	**Cimicifuga**
Bromides	**Opium**
Camphor	**Hoffman's Anodyne**
Valerian	**Heat**

Chloralum hydratum—chloral hydrate or chloral—is formed by the action of chlorine gas on absolute alcohol. It occurs as colorless, transparent crystals, having a peculiar, penetrating odor and a bitter taste. It volatilizes when exposed to the air, melts when heated and forms a liquid when rubbed with camphor, menthol, etc. It is freely soluble in water. Dose, 5 to 20 grs.

Actions.—Chloral is antiseptic; internally it is irritant and should be given well diluted. It is depressing to the heart. Large doses are said to kill, however, by paralyzing the respiratory centre. Chloral is a powerful hypnotic, but will not relieve pain. Sleep is profound and the patient awakes generally free from disagreeable symptoms.

Uses.—It is used as a hypnotic where pain is absent, and as a cerebral depressant in delirium tremens, puerperal convulsions, tetanus and poisoning by strychnine. It is frequently given in the convulsions of infants, for chorea, croup, whooping cough and other spasmodic affections.

Acute Poisoning.—In poisoning by chloral there is profound coma with weak, slow respirations and pulse, and lividity of the surface. The pupils are expanded and there is complete mus-

cular relaxation. Treatment consists in the prompt washing out of the stomach, and the use of strychnine or caffeine subcutaneously as stimulants.

Bromides.—Potassium bromidum—potassium bromide. Sodii bromidum—sodium bromide. Ammonii bromidum—ammonium bromide. Lithii bromidum—lithium bromide. Strontii bromidum—strontium bromide. All have similar actions and are given in the same dose, 5 to 60 grs. The potassium and sodium salts occur as white cubical crystals or as a white granular powder; the ammonium, strontium and lithium salts, in the form of white granular powder. They are all odorless, possess a salty taste and are readily soluble in water.

Actions.—The bromides are irritating to the stomach if given in dry form or in concentrated solution. They are depressant to the nervous system and will cause drowsiness and sleep. The reflexes are lessened. When taken for a considerable time, they produce a chronic poisoning, marked by skin eruptions, inflammation of mucous membranes, deranged digestion and apathy.

Uses.—The bromides are largely used as sedatives in almost all nervous affections; to prevent the attacks of epilepsy; to control convulsions in children; to relieve insomnia, etc.

Camphora—camphor—is obtained by distillation from the wood of a tree growing in China and Japan. It occurs as a white translucent mass, having a crystalloid structure. It volatilizes slowly at ordinary temperatures, is slightly soluble in water, readily soluble in alcohol, ether and chloroform, and in fixed and volatile oils. Rubbed with phenol, menthol or chloral, liquefaction ensues. Dose, ½ to 3 grs.

Preparations.—Aqua camphoræ—camphor water ($\frac{8}{10}$ per cent.). Dose, ½ to 2 fl. oz. Linimentum camphoræ—camphor liniment, camphorated oil (20 per cent. camphor). Spiritus camphoræ—spirit of camphor (10 per cent.). Dose, 15 ♏.

Camphora monobromata—monobromated camphor (made by the action of bromine on camphor). Dose, 2 to 10 grs. Acidum camphoricum—camphoric acid (from the action of nitric acid on camphor). Dose, 10 to 30 grs.

Actions.—Camphor is irritating to the skin and mucous membranes. It is stimulating to the heart. On the nervous system, it is at first stimulating and later sedative. In large doses it produces delirium and convulsions.

Uses.—Camphor is used externally as a mild counterirritant. Internally it is given as a carminative, for its stimulating effect on the heart and as a nervous sedative in hysteria and other nervous conditions. Camphoric acid is given to check the night sweats of pulmonary tuberculosis.

Valeriana—valerian—is obtained from the root of a plant growing in all temperate climates. It has an odor peculiar to itself. Dose, 10 to 30 grs.

Preparations. — Fluidextractum valerianæ — fluidextract of valerian. Dose, 10 to 30 ♏. Tinctura valerianæ—tincture of valerian. Dose, ½ to 2 fl. dr. Tinctura valerianæ ammoniata —ammoniated tincture of valerian. Dose, ½ to 2 fl. dr. Ammonii valeras—ammonium valerate. Dose, 2 to 8 gr. Zinci valeras—zinc valerate. Dose, ½ to 3 gr.

Actions.—Because of a volatile oil which it contains, valerian is irritant when applied externally. Internally it is stimulant to the gastro-intestinal tract. It acts at first as a stimulant to the nervous system, but later depresses it.

Uses.—It is used chiefly as a sedative in nervous disorders.

Cimicifuga—cimicifuga (black cohosh)—is obtained from the root of a plant growing in North America.

Preparations.—Extractum cimicifugæ—extract of cimicifuga. Dose, 5 gr. Fluidextractum cimicifugæ—fluidextract of cimicifuga. Dose, 15 ♏. Tinctura cimicifugæ—tincture of cimicifuga. Dose, ½ to 1 fl. dr.

Actions.—It is an astringent bitter and a cardiac stimulant. It depresses the nervous system and is said to cause uterine contractions.

Uses.—It is used to some extent as an antispasmodic, especially in chorea.

Opium—opium—obtained from the dry juice collected from the unripe seed capsules of a poppy growing in Asia and yielding not less than 9 per cent. of morphine. It occurs in irregular, rounded masses, greyish-brown externally and covered with remnants of poppy leaves. Internally the mass is of a dark brown color and has a peculiar odor and bitter taste. Dose, ½ to 2 grs. Opium is very complex, containing not less than 17 alkaloids. The ones most in use are morphine and codeine.

Preparations.—Opii pulvis—powdered opium. Dose, ½ to 2 grs. Extractum opii—extract of opium. Dose, ⅛ to 1 gr. Tinctura opii—tincture of opium (laudanum). Dose, 5 to 20 ♏. Tinctura opii camphorata—camphorated tincture of opium (paregoric). Dose, 1 to 4 fl. dr. Tincture opii deodorati—tincture of deodorized opium. Dose, 5 to 20 ♏. Pulvis ipecacuanhæ et opii—powder of ipecac and opium (Dover's powder). Dose, 5 to 20 gr.

Morphina—morphine—occurs as white shiny crystals, fine needles or crystalline powder, having a bitter taste. It is only slightly soluble in water. Dose, ⅛ to ¼ gr. The salts of morphine—morphinæ sulphas, morphine sulphate; morphinæ acetas, morphine acetate; and morphinæ hydrochloridum, morphine hydrochloride, are all more soluble than the alkaloid itself and are therefore more generally used. The dose of each is from ⅛ to ¼ gr.

Codeina—codeine—occurs as white crystals or crystalline powder. Dose, ½ to 2 grs. Codeinæ phosphas—codeine phosphate. Dose, ¼ to 2 gr. Codeinæ sulphas—codeine sulphate. Dose, ½ to 2 grs. Its salts are much more soluble than the alkaloid

and hence more generally used. Heroina, unofficial—heroin—is a synthetic derivative of morphine and as the hydrochloride is freely soluble in water. Dose, $\frac{1}{20}$ to $\frac{1}{8}$ gr. Apomorphinæ hydrochloridum—apomorphine hydrochloride—is the hydrochloride of an artificial alkaloid obtained from morphine. It is fairly soluble in water. Dose $\frac{1}{20}$ to $\frac{1}{8}$ gr.

Actions.—Opium may be absorbed from a raw surface, or from mucous membranes. Taken internally, it diminishes all of the secretions of the body except that of the skin. It impairs digestion and may cause nausea. Peristalsis is diminished and constipation results. Respiration is slowed and in poisoning, death is caused by respiratory failure. There is depression of the whole nervous system and the patient sinks into a more or less deep sleep. The sense of pain is much lessened. The pupils are contracted and this, with the sleep and the slow breathing, are characteristic of opium poisoning.

Uses.—Opium, morphine, codeine and their preparations are used chiefly to relieve pain. Codeine and heroin and apomorphine, are often used in cough mixtures. In larger doses apomorphine is powerfully emetic, from stimulation of the vomiting centre in the medulla.

Acute Poisoning.—In from ten minutes to an hour after a large dose of opium is taken by mouth, the patient appears in deep sleep. The respirations become slow (4 to 8 a minute), the face cyanotic and the surface bathed in perspiration. The pupils are contracted, the pulse at first full and slow, later weak and rapid. Death finally occurs from respiratory failure.

Treatment.—The stomach should be washed out repeatedly because the morphine absorbed is excreted again into the stomach. A solution of potassium permanganate is the antidote of choice because it renders inert the alkaloid present. Atropine should be given hypodermatically and caffeine, best in the form of strong black coffee, by mouth or rectum. Oxygen is sometimes of

service. The patient should be kept warm, and artificial respiration resorted to if necessary.

Spiritus ætheris compositus — compound spirit of ether or Hoffman's anodyne—is a mixture of ether, alcohol and ethereal oil, and is a transparent, pale, straw-colored liquid having the odor of ether. Dose, 5 to 60 ♏.

Actions.—It is carminative, a stimulant to the heart, and antispasmodic.

Uses. — It will often relieve palpitation of the heart. It is given to aid in expelling gas from the stomach and intestines, and as an antispasmodic in hiccough and asthmatic attacks.

Heat applied in any form is antispasmodic. A hot bath, for instance, will often relieve the spasm of the ureter in renal calculus more promptly than morphia.

QUESTIONS.

Define antispasmodic.
Name the antispasmodic drugs.
Action and uses of chloral.
Give symptoms of poisoning.
What is the antidote?
Name the official bromides.
Give their action, use and dose.
What is camphor obtained from?
Name the preparations.
Give its action, use and dose.
What is opium obtained from?
Name all its preparations and chief active principles.
Dose of morphine and codeine. Action.
Symptoms of poisoning.
Official name of Hoffman's anodyne.

CHAPTER XVII.

ASTRINGENTS.

DRUGS or agents which cause shrinking of soft, living tissues.

Cold	**Geranium**
Oak Bark	**Gambir**
Galla	**Alum**
Tannic Acid	**Bismuth Salts**
Kino	**Copper Salts**
Kremaria	**Lead Salts**
Hæmotoxylin	**Zinc Salts**
Rhus Glabra	**Silver Salts**

Cold applied to the skin causes a primary contraction of blood-vessels and a shrinking of tissue.

Quercus—white oak. The dried bark of the tree of that name.

Preparations.—Fluidextractum quercus—fluidextract of quercus. Dose, 30 ♏.

Actions.—It is astringent because of the contained tannic acid. It probably has little action internally.

Uses.—As a local astringent—sometimes internally in diarrheas.

Galla—nut-galls. An excrescence on a variety of oak caused by the deposit of the eggs of an insect.

Preparations.—Tinctura gallæ—tincture of nut-galls. Dose, 1 fl. dr. Unguentum gallæ—ointment of nut-gall.

Actions.—Astringent because of its tannic acid.

Uses.—As a local astringent. Given only very occasionally internally.

Tannic acid is described under anthelmintics.

Kino—kino. The inspissated juice of an East Indian plant.

Preparations.—Tinctura kino—tincture of kino. Dose, 1 fl. dr.

Actions.—It is astringent because of its kino-tannic acid.

Uses.—Internally in diarrheas and locally as an astringent gargle or wash.

Krameria—krameria (rhatany). The root of a South American plant. Dose, 7½ grs.

Preparations.—Extractum krameriæ—extract of krameria. Dose, 7½ grs. Fluidextractum krameriæ — fluidextract of krameria. Dose, 15 ♏. Tinctura krameriæ—tincture of krameriæ. Dose, 1 fl. dr. Trochisci krameriæ—troches of krameria. Dose, 1 fl. dr. Syrupus krameriæ—syrup of krameria. Dose, 1 fl. dr.

Actions.—It is astringent from the contained tannic acid. It is also stomachic and is said to have some effect in controlling internal hemorrhage.

Uses.—To control hemorrhage in the nose, rectum or other accessible part. It is given in hemorrhage from the stomach and bowels. It is useful in diarrheas. Given by injection it is curative in certain diseases of the colon and rectum, such as chronic dysentery and chronic proctitis.

Hæmatoxylon — hematoxylon (log-wood). From the wood of a tree growing in Central America and the West Indies.

Preparations.—Extractum hæmatoxyli—extract of hematoxylon. Dose, 15 gr.

Actions.—It is astringent to the intestines, coloring the urine and stools red.

Uses.—It is little used internally. Given to some extent in diarrhea.

Rhus glabra—rhus glabra (sumach). The dried berries of a bush growing in North America.

Preparations.—Fluidextractum rhus glabræ—fluidextract of rhus glabra. Dose, 1 to 5 ♏.

Actions.—Astringent because of contained tannic acid.

Uses.—To some extent as an astringent gargle.

Geranium—geranium (cranesbill). From the root of a plant growing in North America. Dose, 5 to 30 grs.

Preparations.—Fluidextractum geranii—fluidextract of geranium. Dose, 5 to 30 ♏.

Actions.—It is astringent because of tannic acid; also stomachic.

Uses.—As an astringent gargle and in diarrhea.

Gambir—gambir. Prepared from the leaves and twigs of a tree growing in the East Indies. Dose, 5 to 30 grs.

Preparations.—Tinctura gambir composita—compound tincture of gambir. Dose, 1 to 4 fl. dr. Trochisci gambir—troches of gambir.

Actions.—It is powerfully astringent because of its contained tannic acid.

Uses.—As an astringent for relaxed mucous membranes, whether of the throat or vagina—locally, in epistaxis and as a remedy in diarrhea.

Alum—alum—occurs in large colorless crystals without odor, but having a sweetish, and strongly astringent taste. Dose, 7½ grs.

Preparations.—Alumen exsiccatum—dried alum (burnt alum)—made by heating alum until its water is evaporated.

Actions.—Externally alum is astringent and hemostatic. Applied to mucous membranes it whitens and puckers them. It constricts superficial blood-vessels and decreases secretions.

Uses.—Externally to control capillary hemorrhage, as an application in sore mouth and sore throat, in vaginal douches and to relieve excessive sweating of hands and feet. Where granulations are exuberant, burned alum acts as a mild caustic. Internally it is an effective remedy in lead colic.

Bismuth Salts.—Bismuthi subnitras—bismuth subnitrate—is a heavy white powder, odorless and almost tasteless. Dose, 5 to 20 gr. **Bismuthi subcarbonas—bismuth subcarbonate—**

a heavy white powder, having neither odor nor taste. Dose, 5 to 20 gr. **Bismuthi salicylas—bismuth salicylate**—occurs as an odorless, tasteless white powder. Dose, 4 grs. **Bismuthi subgallas—bismuth subgallate (dermatol)**—a bright yellow powder without odor or taste. Dose, 4 gr. These four principal salts of bismuth are all practically insoluble in water.

Actions.—Externally on raw surfaces they are mildly antiseptic and astringent. Internally they are astringent to the gastric and intestinal mucous membranes. They soothe inflamed areas by forming a protective covering. The administration of bismuth causes a garlic-like taste in the mouth, and odor of the breath. It also blackens the stools.

Uses.—Externally bismuth salts are useful in dusting powders and ointments. Internally, they are given in diarrhea, in vomiting from gastric irritation and in gastric ulcer.

Copper Salts.—Cupri sulphas—copper sulphate (blue vitriol or bluestone)—occurs as large, transparent, deep blue crystals, odorless but having a metallic taste. Dose (astringent), gr. $\frac{1}{5}$; (emetic) 4 grs.

Actions.—Externally it is astringent and antiseptic. Internally, moderate doses are promptly emetic. Small doses are astringent. Large doses cause violent vomiting and purging.

Uses.—Externally to destroy granulations and as an application to chronically inflamed eye-lids. Internally, it is sometimes used as an emetic, especially in phosphorous poisoning. It is given in chronic diarrhea and chronic dysentery.

Lead Salts:—

Plumbi oxidi—lead oxide (litharge)—occurs as a heavy yellowish or reddish-yellow powder or minute scales. It is without odor or taste and is almost insoluble in water.

Preparations.—Emplastrum plumbi—lead plaster. Unguentum diachylon—diachylon ointment (containing 50 per cent. lead plaster).

Plumbi acetas—lead acetate (sugar of lead)—occurs as colorless, transparent prisms or plates, white crystalline masses or granular crystals. Dose, 1 gr.

Preparations.—Liquor plumbi subacetatis—solution of lead subacetate (Goulard's extract)—containing 25 per cent. of lead subacetate. Liquor plumbi subacetatis dilutus—diluted solution of lead subacetate (lead water)—containing 1 per cent. of lead subacetate.

Actions.—Upon denuded surfaces, lead preparations are astringent and sedative. Internally they have an astringent action throughout the whole alimentary canal, causing constipation. Poisonous doses cause vomiting, abdominal pain and diarrhea. Continued administration of even small amounts causes chronic poisoning, marked by colic, paralysis of the extensor muscles of the arms and legs, and by a characteristic blue line at the edge of the gums.

Uses.—These salts are used either in solutions or ointments as sedative and astringent applications in a great variety of local inflammations. Lead and opium wash is perhaps the best known preparation and may be made by adding ℥i sugar of lead, ℥ii tinct. opium, to 1 pint water. The ointments are also useful in a variety of skin diseases. Internally the acetate is used in intestinal hemorrhage and diarrhea.

Zinc Salts:

Zinci chloridum—chloride of zinc (butter of zinc)—occurs as white granular powder, or porcelain-like masses, irregular or molded into pencils. It is odorless, has a very astringent, metallic taste and is freely soluble in water.

Preparations.—Liquor zinci chloridi—solution of zinc chloride.

Zinci sulphas—sulphate of zinc (white vitriol)—occurs as colorless crystals or a granular powder. It resembles magnesium sulphate in appearance, but has an astringent, metallic

taste. It, like the chloride, is freely soluble in water. Dose, as astringent, ½ to 2 grs; emetic, 5 grs.

Zinci oxidum—oxide of zinc—is a very fine, white or yellowish-white powder, without odor or taste and insoluble in water. Dose, 4 gr.

Preparations.—Unguentum zinci oxidi—ointment of zinc oxide.

Actions.—Zinc chloride is a powerful corrosive. It is antiseptic, being well known as a household disinfectant. In dilute solution it is astringent. The other salts of zinc are likewise astringent.

Uses.—The chloride is used as a caustic and disinfectant; the sulphate and the chloride also, in dilute solution, as an astringent application to the various mucous membranes, while the oxide enters into a great variety of ointments, lotions and dusting powders. These salts are practically never prescribed internally.

Silver Salts.—Argenti nitras—silver nitrate—occurs as colorless, transparent crystals, odorless, but having a caustic, metallic taste. On exposure to light it becomes grey or greyish-black. It is freely soluble in water. Dose, ¼ to ½ gr.

Preparations.—Argenti nitras mitigatus—mitigated silver nitrate—and argenti nitras fusus—molded silver nitrate (lunar caustic).

Two well-known unofficial preparations deserve notice—one **argyrol,** the other **protargol.** The former contains 30, the latter 8.3 per cent. of silver combined with proteid.

Actions.—The silver salts are astringent and antiseptic. In concentration they are corrosive. When administered for a considerable length of time, the skin of the body becomes pigmented because of absorption from the alimentary canal.

Uses.—Silver itself is used in surgery for dressings in the form of foil, and as wire for sutures. Silver nitrate is used extensively as a caustic, as in removing exuberant granulations.

In solutions of from one to five grains to the ounce of water it is useful in the treatment of cystitis. Somewhat stronger solutions (1 to 2 per cent.) are often used in the treatment of ophthalmia neonatorum, chronic gonorrhea and affections of the lower bowel. The solutions should be made with distilled water and kept in glass stoppered, amber or blue bottles. Internally, silver nitrate is given in gastric ulcer and chronic gastritis. Solutions of argyrol and protargol in various strengths (5 to 50 per cent.) are used chiefly in the treatment of ophthalmia and gonorrhea.

QUESTIONS.

Define astringent.
Name the astringents.
How is tannic acid best used?
Official names of rhatany, nutgall, cranesbill.
Give uses and doses of alum, bismuth salts, copper, lead and zinc salts.
Official name of blue vitriol, green vitriol, sugar of lead.
Give official names of the several forms of silver nitrate.
Give its uses and dose.

CHAPTER XVIII.

CARDIAC DEPRESSANTS.

DRUGS which lessen the rapidity and force of the heart beat.

Aconite **Veratrum** **Antimony**

Aconitum—aconite (monkshood)—is the dried root of a plant growing in the mountains of Europe, Asia and northwestern North America. Dose, 1 gr. A very poisonous alkaloid, aconitine, is its active principle.

Preparations.—Fluidextractum aconiti—fluidextract of aconite. Dose, 1 ♏. Tinctura aconiti—tincture of aconite. Dose, 10 ♏. Aconitina—aconitine, the alkaloid. Dose, $\frac{1}{400}$ gr.

Actions.—Applied externally it at first produces a burning sensation. Numbness follows, because of paralysis of the peripheral nerve endings. Given internally the heart is slowed, surface blood-vessels are dilated and the blood pressure falls. Large doses produce a rapid, irregular heart, and death may follow from cardiac paralysis.

Acute Poisoning.—In poisoning with aconite, there is great muscular weakness, tingling and numbness over the entire body, dilated pupils and profuse sweating. Consciousness is often retained until the very end.

Uses.—Applied externally it is sometimes useful in neuralgia. Internally in the early stages of acute diseases, where there is a high temperature and a full and rapid pulse. The alkaloid, aconitine, is said to be efficient in trifacial neuralgia.

Veratrum—veratrum viride or hellebore—is the dried stalk and roots of a plant growing in North America. Dose, 2 grs.

Preparations.—Fluidextractum veratri—fluidextract of vera-

trum. Dose, 1½ ♏. Tinctura veratri—tincture of veratrum. Dose, 15 ♏.

Actions.—Applied externally its action is similar to that of aconite—producing at first tingling, later numbness. Internally, full doses produce vomiting and purgation. Medicinal doses slow the heart and cause a fall of blood pressure, at the same time there is profuse sweating. Death in poisoning is caused by paralysis of respiration.

Uses.—Veratrum is useful in the early stages of some inflammatory conditions where the pulse is full and bounding and the temperature high. By some it is claimed to be almost specific in puerperal eclampsia. Veratrine, an alkaloid of another species, is used almost exclusively externally to relieve the pain of neuralgia, myalgia, etc.

Antimonium—antimony. The metal was in former days given in a rounded mass, called the "family pill" or "everlasting pill," because it could be repeatedly used for its laxative qualities.

Antimonii et potassii tartras—antimony and potassium tartrate (tartar emetic)—is the chief salt of antimony used medicinally. It occurs as colorless, transparent crystals or a white granular powder, odorless but having a sweetish and afterwards a metallic taste. Dose, $\frac{1}{12}$ to ½ gr.

Preparations.—Vinum antimonii—wine of antimony. Dose, 15 ♏. Syrupus scillæ compositus—compound syrup of squill (hive syrup). Dose, 30 ♏.

Actions.—Externally the salts of antimony are irritating, producing a pustular eruption. Internally in small doses, tartar emetic causes perspiration and increase of bronchial secretion. Larger doses produce nausea and vomiting with considerable prostration. The heart is slowed and its force weakened. Poisonous doses produce violent emesis with profuse watery diarrhea.

Uses.—Mainly as an expectorant, though it is sometimes given in the early stages of inflammatory affections to reduce the force and frequency of the pulse.

CARDIAC STIMULANTS.

Drugs which will for a short time increase the rapidity and strength of the heart's beat.

Ammonia	**Nitroglycerin**
Alcohol	**Ether**
Camphor	**Amyl Nitrite**

Ammonia is described under ant-acids.

Alcohol is described under antiseptics.

Camphor is described under antispasmodics.

Glycerylis nitras—nitroglycerin. The only official preparation of nitroglycerin is spiritus glycerylis nitratis—spirit of nitroglycerin, which is a 1 per cent. solution of nitroglycerin in alcohol. Dose, 1 ♏.

Actions.—Nitroglycerin causes a dilatation of arteries all over the body, and a consequent marked fall in blood pressure. The heart's action is increased. There is a giddiness and a sense of fullness in the head and sometimes a severe frontal headache, which may persist for several hours.

Uses.—Chiefly for the relief of the high tension pulse of chronic Bright's disease, and as a cardiac stimulant. It is sometimes effective in warding off the attacks of angina pectoris, and is often given in certain kinds of asthma.

Ether is described under anesthetics.

Amylis nitris—amyl nitrite—is a clear yellow liquid of a peculiar odor and pungent taste. Dose, 3 ♏.

Actions.—When inhaled, amyl nitrite causes an almost immediate dilatation of peripheral blood-vessels. There is a marked flushing of the face and tumultuous action of the heart. There

is a giddiness and a distressing fullness in the head. There may be some unsteadiness of the gait and some confusion, with dilated pupils and disturbances of vision.

Uses.—As a prompt and powerful stimulant to the heart in chloroform narcosis or heart failure. Attacks of angina pectoris can often be aborted by its prompt use. Amyl nitrite is supplied commercially in small glass capsules, known as "pearls," each containing 5 ♏. If needed, these capsules are placed in a cloth and crushed, and held under the patient's nose.

CARDIAC TONICS.

Drugs which strengthen the heart more or less permanently.

Digitalis	**Sparteine**
Strophanthus	**Convallaria**
Strychnine	**Cactus**
Caffeine	

Digitalis—digitalis (fox-glove)—the dried leaves of a plant growing in Europe. Dose, 1 gr.

Preparations.—Fluidextractum digitalis—fluidextract of digitalis. Dose, 1 ♏. Extractum digitalis—extract of digitalis. Dose, gr. $\frac{1}{6}$. Infusum digitalis—infusion of digitalis. Dose, 3 fl. dr. Tinctura digitalis—tincture of digitalis. Dose, 15 ♏. Digitalin, an unofficial glucoside, is often prescribed subcutaneously in doses of from $\frac{1}{200}$ to $\frac{1}{100}$ gr.

Actions.—Digitalis is a gastro-intestinal irritant and so must be given with care. It slows the frequency of the heart beat and increases the force. It causes a constriction of blood-vessels and a marked rise of blood pressure. It is diuretic, largely by increasing the circulation through the kidneys. Large doses of the drug cause a rapid and irregular heart's action with a progressive fall of blood pressure.

Uses.—Digitalis is useful in all affections of the heart where

a rapid, feeble pulse and low blood pressure indicate failure of compensation. In cases of cardiac disease associated with dropsy, its beneficial effects are especially marked.

Caffeina—caffeine—is found in a variety of plants, but is obtained mostly from tea and coffee. It occurs as white silky needles, odorless, but having a bitter taste. Dose, 1 gr.

Preparations.—Caffeina citrata—citrated caffeine. Dose, 2 grs. Caffeina citrata effervescens—effervescent caffeine citrate. Dose, ʒi.

Actions.—Caffeine increases the rapidity of the heart's action and causes a rise in blood pressure. It is diuretic and stimulating to the nerve centers. This last accounts for the sleeplessness following the use of tea and coffee.

Uses.—Caffeine is useful as a cardiac stimulant and tonic. Its action is particularly marked in heart disease attended by dropsy. It is often combined with antipyrin and acetanilid to correct their depressing effect on the heart. Because of its stimulating effect on the nervous system it will often relieve headache. Combined with sodium benzoate or sodium salicylate, it can be given subcutaneously. With either of these, it makes a 50 per cent. solution.

Strophanthus is the ripe seed of a plant growing in Africa. Dose, 1 gr.

Preparations.—Tinctura strophanthi—tincture of strophanthus. Dose, 8 ♏. Strophanthinum—strophanthin—a glucoside obtained from strophanthus. Dose, $\frac{1}{200}$ gr.

Actions.—Strophanthus causes anesthesia of mucous membranes, but is at the same time a very irritating medicine. Medicinal doses slow and strengthen the action of the heart, toxic doses paralyze it. The rize in blood pressure is not so marked as after the use of digitalis. Strophanthus is an efficient diuretic, largely because of the increased heart's action.

Uses.—Chiefly in heart disease, and particularly in those cases

of high tension and rigid arteries that do not do well under digitalis.

Strychnina—strychnine—is an alkaloid obtained from nux vomica. It occurs as colorless crystals or a white crystalline powder, without odor and having an intensely bitter taste. It is only slightly soluble in water, and so its salts which are much more soluble, are generally prescribed. Dose, gr. $\frac{1}{60}$.

Preparations.—Strychninæ sulphas—strychnine sulphate. Dose, gr. $\frac{1}{60}$. Strychninæ nitras—strychnine nitrate. Dose, gr. $\frac{1}{60}$.

Actions.—Externally strychnine is antiseptic. Internally it slows and strengthens the heart beat and raises the blood pressure. It is also a respiratory stimulant. Reflex irritability through the spinal cord is increased to such an extent, that toxic doses produce convulsions resembling those of tetanus. Where large doses are being given, increased reaction to sudden noises, or slight muscular twitching, should be noticed as the first signs of poisoning. Death comes from paralysis of the heart.

Uses.—Strychnia is used largely as a general and nervous tonic, and for its stimulating effect on the heart.

Sparteinæ sulphas—sparteine sulphate—is the sulphate of an alkaloid found in scoparius (broom). Dose, gr. $\frac{1}{5}$.

Actions.—Sparteine sulphate increases the force of the heart's beat without materially increasing blood pressure. Because of its action on the heart it is diuretic.

Uses.—Principally in heart disease with failure of compensation and consequent dropsy.

Convallaria—convallaria (lily of the valley). The dried stalk and roots of the well known garden plant. Dose, 7½ gr.

Preparations.—Fluidextractum convallariæ—fluidextract of convallaria. Dose, viii ♏.

Actions.—Convallaria slows the heart and raises arterial tension. It is also diuretic and cathartic.

Uses.—It is used in the class of cases benefited by digitalis, but to a much less extent.

QUESTIONS.

Define cardiac depressant.
Name the cardiac depressants.
Give action and uses and dose of aconite.
Give official name and dose of tartar emetic.
Define cardiac stimulant.
Name the cardiac stimulants.
Action, use and dose of nitroglycerin.
Of amyl nitrite.
Define cardiac tonic.
Name them.
Latin name, action, use and dose of fox-glove.
Dose of tincture and infusion of digitalis.
What is caffeine obtained from?
Action, use and dose.
Action, use and dose of strophanthus.
What is strychnine the active principle of?
What is its action, use and dose?
Action and dose of sparteine.

CHAPTER XIX.

CATHARTICS.

DRUGS which cause an evacuation of the bowels.

LAXATIVES.

Sulphur	**Tamarind**
Fig	**Prune**
Cassia Fistula	**Manna**
Castor Oil	**Olive Oil**
	Magnesia

SIMPLE PURGATIVES.

Aloes	**Senna**
Cascara	**Buckthorn**
Rhubarb	**Ox-gall**

DRASTIC PURGATIVES.

Croton Oil	**Scammony**
Colocynth	**Gamboge**
Leptandra	**Elaterium**
Podophyllum	**Calomel**
Jalap	**Aloes**

SALINE PURGATIVES.

Rochelle Salts	**Magnesium Sulphate**
Sodium Sulphate	**Magnesium Carbonate**
Sodium Phosphate	**Liquor Magnesii Citras**

LAXATIVES.

Sulphur—sulphur—is used medicinally in three forms—sulphur sublimatum, sublimed sulphur (flowers of sulphur); sulphur præcipitatum, precipitated sulphur (milk of sulphur); and sulphur lotum, washed sulphur. These all occur as fine yellow powders. Dose ℥i. The first has a slight odor, the other two are odorless. A sulphur ointment, 15 per cent. (unguentum sulphuris), is prepared from washed sulphur.

Actions.—Externally sulphur is irritant, parasiticide and antiseptic. Internally the greater part of the sulphur ingested passes through the intestines unchanged. A certain amount is converted into various compounds that are slightly irritant, and so mildly purgative.

Uses.—Sulphur is much used externally for various parasitic skin diseases. Sulphur and lard is a favorite household remedy for scabies (itch). Internally it may be given as a mild laxative. It enters into the compound licorice powder.

Ficus—**fig**—is a fruit growing in subtropical countries.

Actions.—It is mildly laxative; the dried fruit is so, chiefly because of the indigestible seeds and skin.

Cassia fistula—**cassia fistula**—(**purging cassia**—is the dried fruit of a plant growing in the East Indies and tropical Africa and America. Dose, 60 gr.

Actions.—Chiefly laxative.

Uses.—It enters into confection of senna and is rarely prescribed except in that compound.

Oleum ricini—**castor oil**—an oil expressed from the seed of a plant growing in India, but which may be cultivated in this country. The pulp of the seeds contains a toxalbumin—ricin—which is very poisonous. Dose, ℥iv.

Actions.—The oil is decomposed in the intestines and the ricinolates formed are irritant and therefore purgative.

Uses.—As a laxative chiefly, and especially when there is an accumulation of irritating substances in the intestines. Because of its nauseating taste and smell, various methods are resorted to in giving it. One of the most practical is to have it taken at one draught in a little foaming sarsaparilla soda. Gelatin capsules may be used.

Tamarindus—**tamarind**—the preserved pulp of a fruit growing in India, tropical Africa and the West Indies. Dose, ℥iv.

Actions.—Chiefly laxative.

Uses.—As a laxative, particularly for children. It is often combined with other remedies.

Prunum—prune—a partly dried fruit, resembling the common purple plum. It is grown extensively in the western United States.

Actions.—Slightly laxative.

Uses.—Taken either raw or stewed, prune is of value in cases of mild constipation.

Manna—manna—the saccharine exudate from a tree growing in Europe. Dose, ℥iv.

Actions.—Mildly laxative.

Uses.—It is given chiefly to children as a laxative. It dissolves readily in milk and may be given that way.

Oleum olivæ—olive oil (sweet oil)—an oil expressed from the fruit of a tree growing in Asia, southern Europe and other subtropical countries. Dose, ℥i.

Actions.—Externally it is emollient and lubricant; internally, nutritive and mildly laxative. With sufficient friction, a considerable amount may be absorbed by the unbroken skin. It is supposed by some to have a solvent action on gall-stones.

Uses.—Externally as a lubricant in massage. Internally it is sometimes given as a laxative, particularly to children.

Magnesium oxide is described under ant-acids.

SIMPLE PURGATIVES.

Aloes—aloes—the dried juice of the leaves of a plant growing in tropical countries. It occurs as yellowish, orange or blackish-brown masses, has an aromatic, pungent odor and bitter taste. Dose, gr. iv.

Preparations.—Aloe purificata—purified aloes. Dose, gr. iv. Extractum aloes—extract of aloes. Dose, gr. ii. Pilulæ aloes—pills of aloes. Dose, 2 pills. Pilulæ aloes et ferri—pills of aloes and iron. Dose, 2 pills. Pilulæ aloes et mastiches—pills of

aloes and mastic (Lady Webster pills). Dose, 2 pills. Pilulæ aloes et myrrhæ—pills of aloes and myrrh. Dose, 2 pills. Tinctura aloes—tincture of aloes. Dose, 30 ♏. Tinctura aloes et myrrhæ—tincture of aloes and myrrh. Dose, 30 ♏. Aloinum—aloin—a neutral principle from aloes. Dose, 1 gr.

Actions.—Aloes is a slowly acting, efficient cathartic. It affects chiefly the lower bowel and may cause considerable griping. It is supposed to increase the flow of bile. Because of the congestion it produces in the pelvis, it acts as an emmenagogue.

Uses.—As a simple purgative in constipation. Because of its tendency to gripe, it is best administered with belladonna, hyoscyamus, or some carminative. A combination of aloin, strychnia and belladonna forms the well-known A. S. and B. pill.

Rhamnus purshiana—cascara sagrada (sacred bark)—the dried bark of a tree growing in the Pacific coast states. Dose, 15 gr.

Preparations.—Extractum rhamni purshianæ—extract of cascara sagrada. Dose, 4 gr. Fluidextractum rhamni purshianæ—fluidextract of cascara sagrada. Dose, 15 ♏. Fluidextractum rhamni purshianæ aromaticum—aromatic fluidextract of cascara sagrada. Dose, 15 ♏.

Actions.—Cascara is stomachic and purgative. Its action is attended with little griping.

Uses.—Although in use a comparatively few years, it is a favorite remedy in chronic constipation, or where a simple purgative is required. Unlike most drugs of the sort, increasing doses are not usually necessary.

Rheum—rhubarb—the dried root of a plant growing in Asia. Dose, 15 gr.

Preparations.—Extractum rhei—extract of rhubarb. Dose, 4 gr. Fluidextractum rhei—fluidextract of rhubarb. Dose, 15 ♏. Pilulæ rhei compositæ—compound pills of rhubarb.

Dose, 2 pills. Pulvis rhei compositus—compound powder of rhubarb. Dose, 30 gr. Syrupus rhei—syrup of rhubarb. Dose, 2 fl. dr. Syrupus rhei aromaticus—aromatic syrup of rhubarb. Dose, 2 fl. dr. Tinctura rhei—tincture of rhubarb. Dose, 1 fl. dr. Tinctura rhei aromatica—aromatic tincture of rhubarb. Dose, 30 ♏. Mistura rhei et sodæ—mixture of rhubarb and soda. Dose, 1 fl. dr.

Actions.—Rhubarb is stomachic and purgative. Its action is apt to be accompanied by griping and is followed by more or less constipation. It is excreted through the kidneys and imparts a characteristic yellowish color to the urine.

Uses.—As a purgative, especially in the indigestions of children. Because of its constipating after-effects, it is not so useful in chronic constipation.

Senna—senna. The dried leaflets of a plant growing in Africa. Dose, 60 gr.

Preparations.—Confectio sennæ—confection of senna. Dose, 60 gr. Fluidextractum sennæ—fluidextract of senna. Dose, 30 ♏. Infusum sennæ compositum—compound infusion of senna (black draught). Dose, 4 fl. oz. Pulvis glycyrrhizæ compositus—compound licorice powder. Dose, 60 gr. Syrupus sennæ—syrup of senna. Dose, 1 fl. dr.

Actions.—It is a reliable purgative, though apt to produce griping.

Uses.—In the compound licorice powder especially, senna is much used. A favorite prescription at one time was calomel at night followed by infusion of senna (black draught) in the morning. Confection and syrup of senna are pleasant laxatives for children.

Frangula—frangula (buckthorn). The dried bark of a tree growing in Europe and northern Asia. Dose, 15 gr.

Preparations.—Fluidextractum frangulæ—fluidextract of frangula. Dose, 15 ♏.

Actions.—The fresh bark causes severe gastro-intestinal irritation. Kept for one year, its action is similar to that of senna.

Uses.—As a purgative, particularly in chronic constipation.

Fel bovis—ox-gall. The fresh bile from the gall-bladder of the steer or ox. It comes to us as fel bovis purificatum—purified ox-gall—which is a yellowish-green soft solid, having a peculiar odor and bitter taste. Dose, 7½ gr.

Actions.—It increases the output of bile and is purgative. It aids in the absorption of fat in the intestine.

Uses.—To some extent as a cholagogue cathartic. Because of its liability to disturb the stomach, it is most often given in enemata—one to two ounces in a pint of water being used.

DRASTIC PURGATIVES.

Oleum tiglii—croton oil. A fixed oil expressed from the seeds of a small tree growing in India and the Philippines. Dose, 1 ♏.

Actions.—Croton oil is very irritating to the skin. A drop causes prompt vesication—which quickly changes to pustule. It is likewise very irritating to the intestinal tract and except in the smallest doses causes marked gastro-enteritis.

Uses.—Formerly as a vesicant. It is useful as a drastic purge in apoplexy, uremia and eclampsia, and in obstinate constipation where there is no obstruction.

Colocynthis—colocynth (bitter apple)—is the pulp of the fruit of a vine growing in Eastern countries. Dose, 1 gr.

Preparations.—Extractum colocynthidis—extract of colocynth. Dose, ½ gr. Extractum colocynthidis compositum—compound extract of colocynth. Dose, 7½ grs. Pilulæ catharticæ compositæ—compound cathartic pills. Dose, 2 pills.

Actions.—It stimulates the secretion of bile, the secretion of the intestines and the intestinal movements. Profuse watery movements are produced with considerable griping.

Uses.—It is useful where a drastic purge is needed. It is given combined with other remedies.

Leptandra—leptandra—is the root of a plant growing in the eastern United States. Dose, 15 gr.

Preparations.—Extractum leptandræ—extract of leptandra. Dose, gr. iv. Fluidextractum leptandræ—fluidextract of leptandra. Dose, 15 ♏. Pilulæ catharticæ vegetabilis—vegetable cathartic pills. Dose, 2 pills.

Actions.—It is a drastic purgative, at the same time stimulating to the liver.

Uses.—It is given in chronic constipation and where action on the upper part of the bowel is desirable.

Podophyllum—podophyllum (May apple or mandrake). The dried root of a plant growing in North America. Dose, 7½ grs.

Preparations.—Fluidextractum podophylli—fluidextract of podophyllum. Dose, 8 ♏. Resina podophylli—resin of podophyllum (podophyllin). Dose, $\frac{1}{10}$ to ¼ gr. Pilulæ podophylli, belladonnæ et capsici—pills of podophyllum, belladonna and capsicum. Dose, 1 pill.

Actions.—Podophyllum is a drastic, rather slowly acting cholagogue cathartic. Large doses cause a marked gastro-enteritis.

Uses.—Because of its action on the liver, podophyllum is used largely in constipation associated with hepatic derangement. The resin (podophyllin) is the form usually given and is best administered with other remedies.

Jalap—jalap—the dried root of a plant growing in Mexico. Dose, 15 gr.

Preparations.—Pulvis jalapæ compositus—compound powder of jalap. Dose, 30 gr. Resina jalapæ—resin of jalap. Dose, 2 gr. Jalap also enters into the compound cathartic and the vegetable cathartic pills.

Actions.—Jalap is a powerful hydragogue cathartic. It stimulates the intestinal secretions to such an extent that the movements are very watery.

Uses.—Because of its power to abstract water, jalap is useful in all forms of dropsy, and especially in that from Bright's disease.

Scammonium—scammony—is a gum resin obtained by incising the living root of a plant growing in Asia. Dose, gr. iv.

Preparations.—Resina scammonii—resin of scammony. Dose, 3 gr.

Actions.—Like jalap it is a powerful hydragogue cathartic. Large doses cause severe gastro-enteritis.

Uses.—As a cathartic in dropsy and obstinate constipation. Because of its violent action it is best combined with other remedies.

Cambogia—gamboge. A resin obtained from a plant growing in the East. Dose, gr. 2. Gamboge enters into the compound cathartic pill.

Actions.—Gamboge is a violent hydragogue cathartic.

Uses.—Because of its severe action it is almost always used in combination with other remedies.

Elaterium—elaterium—is a sediment collected from the juice of a plant called the squirting cucumber. It is not official. Dose, $\frac{1}{10}$ to $\frac{1}{2}$ gr.

Preparations.—Elaterinum—elaterin, a neutral principle. Dose, $\frac{1}{10}$ gr. From this is made the trituration of elaterin, which is given in $\frac{1}{2}$ grain doses.

Actions.—Elaterium is the most powerful hydragogue cathartic known. It removes so much fluid that its action is generally attended by considerable prostration.

Uses.—The neutral principle, elaterin, is the form of the drug usually given. It is useful in dropsies, in uremia and eclampsia;

but because of the attendant depression should be given cautiously.

Calomel is described under alteratives.

Aloes is described under simple purgatives.

SALINE PURGATIVES.

Potassii et sodii tartras—potassium and sodium tartrate (Rochelle salt). Dose, 120 gr.

Preparations.—Pulvis effervescens compositus—compound effervescing powder (Seidlitz powder)—which comes put up in two papers, white and blue. The larger of the two papers contains 120 grs. Rochelle salts and 40 grs. of sodium bicarbonate; the smaller, 35 grs. of tartaric acid. The contents of the two papers are dissolved in water in separate glasses. When these are poured together, effervescing or foaming results, making the taste of the Rochelle salts less unpleasant.

Sodii sulphas—sodium sulphate (Glauber's salt)—occurs as large colorless, transparent crystals, having a bitter saline taste. Dose, 240 grs.

Sodii phosphas—sodium phosphate—occurs as large colorless prisms, or a granular crystalline salt having a cooling, saline taste. Dose, 30 gr.

Magnesii sulphas—magnesium sulphate (Epsom salt)—occurs as small colorless prisms or prismatic needles, having a bitter taste. Dose, 240 gr.

Magnesii carbonas is described under ant-acids.

Preparations.—Liquor magnesii citratis—solution of magnesium citrate—is made by dissolving magnesium carbonate in a solution of citric acid to which syrup of citric acid and potassium bicarbonate are added. Dose, 12 oz.

Actions of all saline purgatives. These cause the abstraction of fluid from the blood and its accumulation in the intestines. They are all more or less diuretic, and the sodium sulphate and

phosphate are mild cholagogues. Magnesium sulphate is the most powerful.

Uses.—Solution of magnesium citrate is a palatable, mild purgative, especially adapted to children. Sodium sulphate and phosphate are often given for catarrhal conditions of the upper bowel associated with jaundice. The sulphate enters into many of the well-known mineral waters. Magnesium sulphate is a favorite purge where prompt action is desired—as after operations.

QUESTIONS.

Define cathartic.
Name the laxatives.
Name the simple purgatives.
Name the drastic purgatives.
Name the saline purgatives.
Action, use and dose of sulphur.
Action and dose of castor oil.
Action, use and dose of aloes, cascara, rhubarb.
Action, use and dose of senna, ox-gall, croton oil, colocynth, podophyllin, jalap, scammony, elaterium and calomel.
Names, action and uses of saline purgatives.

CHAPTER XX.

CARMINATIVES.

DRUGS which aid in expelling gas from stomach and intestines by increasing peristalsis.

Capsicum	**Ginger**
Cardamom	**Peppermint**
Anise	**Spearmint**
	Spices

Capsicum is described under rubefacients.

Cardamom is described under stomachics.

Anisum—anise. The ripe fruit of a tree growing in western Asia, Egypt and southeastern Europe. Dose, 7½ gr.

Preparations.—Oleum anisi—oil of anise, dose, 3 ♏; from which comes aqua anisi—anise water, dose, 4 fl. dr.; and spiritus anisi—spirit of anise, dose, 1 fl. dr.

Actions.—Chiefly carminative.

Uses.—It is perhaps the most pleasant carminative for children and infants. The seeds are used to a considerable extent in cooking.

Zingiber—ginger—the dried root of a plant growing in India and cultivated in the tropics. Dose, 15 gr.

Preparations.—Fluidextractum zingiberis—fluidextract of ginger. Dose, 15 ♏. Oleoresina zingiberis—oleoresin of ginger. Dose, ½ gr. Tinctura zingiberis—tincture of ginger. Dose, 30 ♏. Syrupus zingiberis—syrup of ginger. Dose, 4 fl. dr.

Actions.—Like all substances containing aromatic volatile oils, ginger externally is rubefacient. Internally it increases the secretions of the stomach and its movements, hence is stomachic and carminative.

Uses.—Largely as a carminative. It is also used as a flavoring agent.

Mentha piperita—peppermint. The dried leaves and flowering tops of a plant growing in Asia, Europe and North America. Dose, 60 gr.

Preparations.—Oleum menthæ piperitæ—oil of peppermint. Dose, 3 ♏. Aqua menthæ piperitæ—peppermint water. Dose, 4 fl. dr. Spiritus menthæ piperitæ—spirit of peppermint. Dose, 30 ♏.

Actions.—Because of its volatile oil, peppermint is rubefacient externally. Internally it is stomachic and carminative. The oil applied to the skin produces a sensation of cold.

Uses.—It is applied externally for the relief of neuralgia and rheumatic pains. Internally it is used chiefly for its carminative properties and as a flavoring agent.

Mentha viridis—spearmint. The dried leaves and tops of a plant growing in the temperate zones. Dose, 60 grains.

Preparations.—Oleum menthæ viridis—oil of spearmint. Dose, 3 ♏. Aqua menthæ viridis—spearmint water. Dose, f℥iv. Spiritus menthæ viridis—spirit of spearmint. Dose, 30 ♏.

Actions and *uses* same as those of peppermint described above.

Spices.—All spices such as cloves (caryophyllus), allspice (pimenta), nutmeg (myristica) and cinnamon (cinnamonum) are carminative because of the volatile oil they contain. They are all used more as flavoring than as medicinal agents.

DIGESTANTS.

Drugs that will take part in and so aid gastro-intestinal digestion.

Pepsin — **Extract of Malt**
Pancreatin — **Papain**
Hydrochloric Acid

Pepsinum—pepsin—is a digestive ferment obtained from the mucous membrane of the stomach of the hog. It occurs as a pale straw-colored powder or scales. Dose, gr. 4.

Actions.—Pepsin will digest proteids in an acid solution. It is inert in alkaline solutions and is even rapidly decomposed by them. Being one of the normal constituents of the gastric juice, its action takes place in the stomach.

Uses.—It is given as an aid to stomach digestion, where the secretion of gastric juice is deficient.

Pancreatinum—pancreatin—is a mixture of the ferments existing in the pancreas of warm-blooded animals and is usually obtained from the pancreas of the calf. It occurs as a fine yellowish powder having a meaty odor and an alkaline taste. It should contain four ferments, viz.: trypsin, which digests proteids; steapsin, which digests oils and fats; amylopsin, which converts starch into sugar, and a ferment which curdles milk. Dose, 7½ gr.

Actions.—Its actions take place in the alkaline juices of the small intestines and consist in the digestion of all proteid substances, the converting of starch into sugar and the emulsifying of fats.

Uses.—Largely to predigest foods outside the body. It is given as an aid to intestinal digestion, and for that purpose should be administered from one to two hours after meals.

Acidum hydrochloricum—hydrochloric or muriatic acid—is formed by the action of sulphuric acid on common salt. The chemically pure acid is a colorless, fuming liquid. It is used only in its diluted form.

Preparation.—Acidum hydrochloricum dilutum—dilute hydrochloric acid—is 10 per cent. hydrochloric acid in water. Dose, 15 ♏.

Actions.—Hydrochloric acid is one of the normal constituents of the gastric juice, being present in the stomach in the strength of $\frac{2}{10}$ per cent. It aids pepsin in the digestion of proteids.

Uses.—It is given after meals when the secretion of acid in the stomach is deficient.

Maltum—malt—is the dried, partially germinated grain of barley. It contains the ferment *diastase*, which has the power of converting starch into sugar.

Preparations.—Extractum malti—extract of malt—a sweet, thick brownish liquid. Dose, 4 dr.

Actions.—Malt is mainly nutritive, though some of the preparations may contain enough diastase to assist in the digestion of starch.

Uses.—Malt extracts are given in conditions where a readily assimilable carbohydrate food is desired. Malt extract is often used as a vehicle for the administration of iron, cascara sagrada, or cod-liver oil. An unofficial preparation called taka-diastase, obtained from the action of a fungus on steamed rice, has been found much more efficient than malt in the digestion of starch. Dose, 5 to 10 grs.

Papain—papoid or caroid—are the several names given to a vegetable digestive ferment obtained from the carica papaia—a South American tree. It occurs in the form of a straw-colored powder. It is not official. Dose, 1 to 10 gr.

Actions.—Externally it acts as a digestive of objectionable growths, or unhealthy, sloughing tissue. Internally, it changes proteids to peptones, whether in acid, alkaline or neutral solutions.

Uses.—Mainly as an aid to digestion in certain forms of dyspepsia.

QUESTIONS.

Define carminative.
Name the carminative drugs.
Action, use and dose of each.
Define digestants.
Name all of them.
Give action and use of pepsin.
What are pepsin and pancreatin obtained from?
Name the ferments present in pancreatin—in health.
What is papoid derived from?

CHAPTER XXI.

DIURETICS.

DRUGS or agents which increase the output of urine.

Water	**Buchu**	**Uva Ursi**
Digitalis	**Potassium Salts**	**Nitrous Ether**
Caffeine	**Squill**	**Lithium Salts**
Broom	**Cantharides**	**Pareira**
	Juniper	

Aqua—water—in sufficient quantity is one of the simplest and best diuretics. The stimulation of the kidneys is not necessarily due to substances in solution in the water; because the effect is noted where Poland water (which is practically free from minerals) or even distilled water, is used.

Scoparius—broom. The dried top of a plant growing in Europe and Asia. Dose, gr. 15.

Preparations.—Sparteinæ sulphas—sparteine sulphate—the sulphate of an alkaloid obtained from scoparius. Dose, gr. $\frac{1}{5}$.

Actions.—Chiefly as a diuretic. Its alkaloid, sparteine, is described under cardiac tonics.

Uses.—It is given, generally with other diuretics, in dropsy from heart disease and chronic nephritis. Sparteine sulphate is useful as a cardiac stimulant in failure of compensation.

Buchu—buchu. The dried leaves of a plant growing in southern Africa. Dose, 30 gr.

Preparations.—Fluidextractum buchu—fluidextract of buchu. Dose, 30 ♏.

Actions.—Moderate doses stimulate the stomach, cause a mild diaphoresis, and are supposed to increase the output of

urine. At the same time it exerts a slight, antiseptic action on the urinary tract.

Uses.—It is given chiefly in cystitis and vesical irritation, and when the urine is acid, muddy and heavily laden with salts.

Uva ursi—uva ursi (bearberry or upland cranberry)—is the leaf of an evergreen herb common in the northern United States. Dose, 5 to 20 grs.

Preparations.—Fluidextractum uvæ ursi. Dose, 30 ♏.

Actions.—It is a mild disinfectant to the urinary tract. It is astringent and diuretic. Large doses cause vomiting and purging.

Uses.—It is given in cystitis, pyelitis and other inflammatory conditions of the urinary tract.

Oleum juniperi—oil of juniper—is a volatile oil obtained from the berry of the common juniper tree of the northern hemisphere. Dose, 3 ♏.

Preparations.—Spiritus juniperi—spirit of juniper. Dose, 30 ♏. Spiritus juniperi compositus—compound spirit of juniper. Dose, 2 fl. dr.

Actions.—Juniper is stomachic. It stimulates the renal function powerfully. Large doses are, however, irritating and may cause hematuria or even suppression of urine. It has some action as a urinary antiseptic.

Uses.—It is used chiefly as a diuretic in dropsies resulting from chronic Bright's disease or diseases of the heart. It is considered useful as an antiseptic in pyelitis, cystitis and other inflammations of the urinary tract.

Pareira—pareira brava—is the dried root of a South American plant. Dose, 30 ♏.

Preparations.—Fluidextractum pareiræ—fluidextract of pareira. Dose, 30 ♏.

Actions.—Similar to those of buchu.

dry air baths. The methods of application can be found in any text-book on nursing.

QUESTIONS.

Define diuretics.
Name them.
Action, use and dose of broom, buchu, oil juniper, lithium and the potassium salts.
Define diaphoretic.
Name them.
Action, use and dose of pilocarpine.

CHAPTER XXII.

DISINFECTANTS.

DRUGS or agents used to destroy the contagium of disease, and for decomposing noxious vapors.

Formalin Gas	**Chloride of Lime**
Sulphurous Oxide	**Chloride of Zinc**
Carbolic Acid	**Heat**
Bichloride of Mercury	

Formaldehydum—formaldehyde—is a gas soluble in water. The official preparation known as formalin (liquor formaldehydi) is a 40 per cent. solution of the gas in water.

Actions.—Formaldehyde is a powerful disinfectant. A sufficient amount of the gas let into a sealed room will kill any microorganisms attached to the walls, furniture, etc. The gas is irritant to the mucous membranes. It fixes and hardens animal tissues.

Uses.—Formaldehyde, either as a gas or in solution, is used largely as a disinfectant. In the laboratory, formalin of various strengths is used to fix and harden tissues for microscopical work.

Sulphurous acid gas—or sulphur dioxide—is formed when sulphur is burned in the air in the presence of moisture furnished from wet cloths or water in open vessels.

Actions.—It is a powerful bleaching and antiseptic agent, very irritant to mucous membranes.

Uses.—It is used for disinfecting rooms, holds of ships, etc. A 2 per cent. solution of the gas in water is official under the name of sulphurous acid (acidum sulphurosum).

Phenol—carbolic acid—is described under anesthetics. Solutions of either the crude or the refined acid are often used

in strengths of from 1 to 40, to 1 to 20 for disinfecting soiled linen, apparatus of various kinds, drains, etc.

Hydrargyri chloridum corrosivum—corrosive sublimate or bichloride—is described under antiseptics. In solutions of from 1–2000 to 1–500 it is a valuable disinfectant. It must be remembered, however, that in the presence of organic matter, the bichloride is quickly rendered inert.

Calx chlorinata—chlorinated lime—chloride of lime—comes as a white powder. It is formed by passing chlorine gas over slaked lime. It should contain 30 per cent. of available chlorine. It decomposes, giving off chlorine, when moistened or exposed to the air, hence should be kept dry and tightly sealed.

Actions.—It is disinfectant and a good bleaching agent.

Uses.—When fresh and of full strength, it is an excellent agent for disinfecting excreta, drains, etc.

Zinci chloridum—zinc chloride—is described under astringents.

Heat is used as a disinfectant, either moist or dry, the moist heat being the more effective. Clothes, utensils or instruments, immersed in boiling water for from ten to thirty minutes, or put in a closed chamber filled with live steam for the same length of time, are absolutely free from germs. Instruments held in the flame of an alcohol lamp or Bunsen burner are of course sterile. In sterilizing (disinfecting) utensils or instruments with dry heat, a greater temperature and longer exposure is needed, than with moist heat.

QUESTIONS.

Define disinfectants.

Name them all.

Action and methods of using formaldehyde and sulphurous acid gas, phenol, bichloride and chlorinated lime.

CHAPTER XXIII.

DEMULCENTS.

DRUGS or preparations that are soothing to mucous membranes.

Raw Egg Albumin	**Gum Arabic**
Barley Water	**Gelatin**
Slippery Elm	**Irish Moss**
Flaxseed	**Cydonium**
Tragacanth	**Sassafras Pith**

Egg albumin is easily assimilated, nutritious and soothing. The white of one egg stirred into half pint of cool water with a little salt or lemon juice added, makes a valuable food, when for any reason it is desirable to keep the intestinal tract empty. Egg albumin is valuable as an antidote in poisoning by corrosives such as bichloride, copper sulphate, and lead salts.

Barley water is nutritious and highly demulcent. It can be made either from barley flour or from pearl barley. It is used largely to dilute milk in feeding infants, or as the exclusive food in inflammation of the gastro-intestinal tract.

Ulmus—elm (slippery elm bark). The dried bark of a tree of the eastern United States.

Preparations.—Mucilago ulmi—mucilage of elm. Dose, ℥iv.

Actions.—Slippery elm is largely demulcent.

Uses.—It is recommended as a drink in inflammations of the throat and of the gastro-intestinal tract.

Linum—flaxseed—linseed. The ripe seeds of a plant growing in southern Europe and the Levant.

Preparations.—Oleum lini—linseed oil, linimentum calcis—carron oil and lini farina—flaxseed meal.

Actions.—Externally in the form of poultices as an emollient, internally, as a demulcent.

Tragacantha—tragacanth. An exudation from a tree growing in western Asia.

Preparations.—Mucilago tragacanthæ—mucilage of tragacanth. Dose, 4 fl. dr.

Actions.—Tragacanth is demulcent and also has slight nutritive properties.

Uses.—It enters into many troches. It is used chiefly as a vehicle for various drugs and particularly for suspending insoluble powders.

Acacia—gum arabic—an exudation from a tree growing in Africa.

Preparations.—Mucilago acaciæ—mucilage of acacia. Dose, 4 fl. dr. Syrupus acaciæ—syrup of acacia.

Actions.—Entirely demulcent.

Uses.—It is sometimes given in inflammations of the bronchial, vesical or intestinal mucous membranes. It is useful as a vehicle for various drugs and is used largely in the emulsifying of fats and resins.

Gelatinum—gelatin. Obtained from animal tissues (skin, ligaments, bones) by treating with boiling water.

Preparations.—Gelatinum glycerinatum—glycerinated gelatin.

Actions.—Gelatin is demulcent and to a certain extent nutritive. It is said to increase the coagulability of the blood.

Uses.—It is used as a protective covering in diseases of the skin. It is the basis of many capsules, lozenges, etc., and a coating for pills. A solution of gelatin has been injected subcutaneously to increase the coagulability of the blood in aneurism.

Chondrus—Irish moss—is a dried sea-weed found in the Atlantic Ocean. Dose, 4 dr.

Actions.—It is demulcent and to some extent nutritive.

Uses.—It was formerly much given as a decoction in in-

flammations of the various mucous membranes. As a jelly, it is a pleasant article of diet.

EMOLLIENTS.

Agents used to soften and soothe the skin.

Cocoa Butter	**Glycerin**
Lanolin	**Lard**
Olive Oil	**Spermaceti**
Almond Oil	**Petrolatum**
Cottonseed Oil	**Poultices**

Oleum theobromatis—oil of theobroma (cocoa butter)—is a fixed oil expressed from the beans of a tree growing in South America. It comes as a yellowish-white solid with an agreeable chocolate taste, melting at the temperature of the body.

Action and Use.—Cocoa butter is nutrient and emollient. By inunction it is used to soften the skin and to increase nutrition. It forms the base for suppositories and is used as a lubricant in giving massage.

Adeps lanæ hydrosus—hydrous wool-fat or lanolin—is the purified fat from sheep's wool, containing not more than 30 per cent. water. It is a yellowish-white, soft mass, which will absorb twice its weight of water.

Actions and Uses.—It will soften and soothe the skin, and is readily absorbed by friction. It forms the base of a great many ointments, and is an excellent vehicle for drugs given by inunction.

Oleum amygdalæ expressum—expressed oil of almond—is a fixed oil expressed from the seeds of either the bitter or the sweet almond. Dose, 4 fl. dr.

Actions and Uses.—Almond oil is emollient and nutritive. It is used in much the same way and for the same things, as olive oil. To many persons it is less objectionable than the latter.

Oleum gossypii seminis—cottonseed oil—is a fixed oil expressed from the seed of the cotton plant. Dose, 4 fl. dr.

Actions and Uses.—The same as olive oil, for which it is often substituted.

Glycerinum—glycerin—is a clear, colorless, syrupy liquid, of a sweet taste, obtained by the decomposition of animal or vegetable fats. Dose, 1 fl. dr.

Preparations.—Glyceritum amyli—glycerite of starch. Glyceritum phenolis—glycerite of carbolic acid. Glyceritum acidi tannici—glycerite of tannic acid. Glyceritum boroglycerini—glycerite of boroglycerin. Glyceritum hydrastis—glycerite of hydrastis. Glyceritum ferri, quininæ et strychninæ phosphatum—glycerite of iron, quinine and strychnine phosphate. Dose, 15 ♏. Suppositoria glycerini—glycerin suppositories.

Actions and Uses.—Large doses are irritating to the intestinal tract. In moderate doses, however, glycerin is demulcent and nutritive. Externally it is emollient and antiseptic. Given by rectum it produces a prompt evacuation of the bowels. It is used chiefly externally for its emollient properties and as a vehicle for active drugs.

Adeps—lard—the internal fat from the abdomen of the domestic hog, purified by washing with water, melting and straining.

Preparations.—Adeps benzoinatus—benzoinated lard. Ceratum—cerate. Ceratum resinæ—resin cerate and unguentum—ointment.

Actions and Uses.—Lard is emollient. It is used very largely as a base for ointments and as a vehicle for drugs given by inunction.

Cetaceum—spermaceti—is a fatty substance obtained from the sperm whale.

Preparations.—Unguentum aquæ rosæ—rose-water ointment.

Actions and Uses.—It is emollient, and is used as a basis for ointments and cerates.

Petrolatum—petrolatum—is the heavy portion left after distilling petroleum.

Actions and Uses.—It is emollient, and an excellent protective to the skin, but not being absorbed readily, is not a suitable vehicle for drugs meant for absorption. It is used very largely in the preparation of ointments.

Cataplasmata—poultices—of flaxseed, kaoline, bran, elm bark, etc., may be used to soften and soothe the skin though they are chiefly employed for the application of moist heat.

QUESTIONS.

Define demulcent.
Name them.
Action and method of using all of them.
Official title of cocoa butter. Uses.
Name the official compounds with glycerin.
What is glycerin obtained from?

CHAPTER XXIV.

EPISPASTICS.

DRUGS or agents which will produce a blister if applied to the skin.

Cantharides **Heat**

Cantharis—cantharides (Spanish flies). A beetle living in central and southern Europe. It is bronze-green in color and about one inch long. The blistering principle it contains is called cantharidin. Dose, ½ gr.

Preparations. — Ceratum cantharides — cantharides cerate. Collodium cantharidatum—cantharidal collodion. Tinctura cantharidis—tincture of cantharides. Dose, 5 ♏.

Actions.—Externally cantharides is a powerful irritant, producing vesication if allowed to act for 2 or 3 hours. Internally in sufficient doses it is a gastro-intestinal irritant. The kidneys are stimulated by small or moderate doses. Large doses produce albuminuria, hematuria and sometimes total suppression of urine. There is at the same time intense irritation of the bladder and urethra.

Uses.—Chiefly as a vesicant. It is given some as a stimulant to the urinary apparatus and in amenorrhea. It enters into many of the preparations used for stimulating the growth of hair.

ESCHAROTICS.

Drugs or agents which will burn into soft, living tissues.

Nitric Acid
Sulphuric Acid
Chromic Acid
Glacial Acetic Acid
Zinc Sulphate
Zinc Chloride
Copper Sulphate
Silver Nitrate
Mercuric Nitrate
Arsenous Acid
Potash
Soda
Alum

Acidum nitricum—nitric acid—made by distilling sulphuric acid with potassium nitrate.

Preparations.—Acidum nitricum dilutum—dilute nitric acid. Dose, 30 ♏. Acidum nitrohydrochloricum—nitrohydrochloric acid. Dose, 3 ♏. Acidum nitrohydrochloricum dilutum—dilute nitrohydrochloric acid. Dose, 15 ♏.

Actions.—Externally, nitric acid is corrosive, forming a yellow stain and eschar. Internally nitrohydrochloric stimulates the flow of bile; while all preparations of the acid assist in digestion if taken after meals.

Uses.—Because of the ease with which the action of nitric acid is limited, it is largely employed as a caustic in the treatment of venereal sores, warts, poisoned and sloughing wounds. Nitrohydrochloric acid is frequently used in the treatment of certain forms of dyspepsia and in oxaluria.

Acidum sulphuricum—sulphuric acid (oil of vitriol)—is a colorless oily liquid.

Preparations.—Acidium sulphuricum dilutum—dilute sulphuric acid. Dose, 30 ♏. Acidum sulphuricum aromaticum—aromatic sulphuric acid. Dose, 15 ♏.

Actions.—Concentrated sulphuric acid is powerfully corrosive, forming a brown or black eschar. The dilute solutions are astringent and will assist in digestion.

Uses.—To some extent as a caustic for venereal sores and sloughing wounds. Dilute sulphuric acid is taken internally as a prophylactic against lead poisoning and in certain forms of dyspepsia.

Chromii trioxidum—chromium trioxide (chromic acid)—occurs as blood red crystals that rapidly absorb water and liquefy.

Actions.—It is powerfully caustic. Taken internally it produces intense pain, vomiting, purging and collapse.

Uses.—Strong solutions or the acid itself, are used for the de-

struction of growths of various kinds; weak solutions, in the treatment of ulcers, parasitic skin diseases and in other conditions where a mild caustic is indicated.

Acidum aceticum glaciale—glacial acetic acid—is a clear colorless liquid of a strong vinegar-like odor and containing not less than 99 per cent. of absolute acetic acid.

Actions.—Glacial acetic acid is irritant, astringent and caustic.

Uses.—It is used principally as a caustic in the treatment of warts, corns, ulcers and nasal hypertrophies.

Zinc sulphate and zinc chloride are described under astringents.

Copper sulphate is described under astringents.

Silver nitrate is described under astringents.

Liquor hydrargyri nitratis—solution of mercuric nitrate—is a colorless liquid with an odor like nitric acid and containing about 60 per cent. of mercuric nitrate. It is formed by dissolving red mercuric oxide in nitric acid and water.

Actions.—It is powerfully caustic, is very penetrating and its action is painful.

Uses.—It is used chiefly for the removal of superficial growths.

Arsenous acid is described under alteratives.

Potassii hydroxidum—potassium hydroxide (caustic potash)—usually comes in hard, brittle pencils which rapidly absorb moisture on exposure to the air.

Preparations.—Liquor potassii hydroxidi—solution of potassium hydroxide (liquor potassæ)—containing about 5 per cent. of potassium hydroxide. Dose, 15 ♏.

Actions.—Applied to living tissue, potassium hydroxide is powerfully caustic, forming semi-transparent crusts which subsequently separate, leaving an ulcer. A weak solution taken internally acts as an ant-acid.

Uses.—As a caustic, when a very deep and decided influence

is desired. Vienna paste, made by combining equal parts of the potash and lime, is the preparation most often used.

Sodii hydroxidum—sodium hydroxide (caustic soda)—comes in the same form as potash.

Preparations.—Liquor sodii hydroxidi—solution of sodium hydroxide (liquor sodæ)—contains about 5 per cent. of sodium hydroxide. Dose, 15 ♏.

Actions and *uses* the same as for potash.

Alum is described under astringents.

QUESTIONS.

Define epispastic.
Name the epispastics.
Give list of preparations of cantharides and dose of the drug.
Give its action and uses.
Define escharotic and name them.
Uses of nitric acid, chromic acid, potassa.

CHAPTER XXV.

EMETICS.

DRUGS that may be used to produce vomiting.

Apomorphine	**Ipecac**
Tartar Emetic	**Copper Sulphate**
Mustard	**Zinc Sulphate**

Apomorphinæ hydrochloridum—apomorphine hydrochloride—is the hydrochloride of an artificial alkaloid prepared from morphine. Sedative dose, $\frac{1}{80}$ gr. Emetic dose, $\frac{1}{10}$ gr.

Actions.—It produces vomiting by irritation of the vomiting center in the medulla. Small doses are sedative and at the same time increase the secretion of fluid from the bronchial mucous membranes.

Uses.—It is given hypodermatically where a certain emetic is needed in doses of from $\frac{1}{10}$ to $\frac{1}{6}$ gr. Small doses ($\frac{1}{40}$ to $\frac{1}{20}$ gr.) are useful as a sedative, and to promote secretion in affections of the bronchial mucous membrane.

Tartar emetic is described under cardiac depressants.

Mustard is described under rubefacients. As an emetic it is best administered by mixing a tablespoonful of the powdered drug with warm water to the consistency of cream.

Ipecacuanhæ—ipecac—is the dried root of a plant growing in South America. Dose (expectorant), 1 gr.; (emetic), 15 gr.

Preparations.—Fluidextractum ipecacuanhæ—fluidextract of ipecac. Dose, 1 to 15 ♏. Syrupus ipecacuanhæ—syrup of ipecac. Dose, 15 ♏ to 4 dr. Vinum ipecacuanhæ—wine of ipecac (10 per cent.). Dose, f℥i.

Actions.—Externally ipecac is irritant. It has mild antiseptic properties. Large doses internally cause emesis, probably from

gastric irritation; small doses are stomachic. The flow of bile and the secretion of mucus from the bronchial mucous membranes are increased by its ingestion. Very small doses will often relieve vomiting. Ipecac is mildly diaphoretic.

Uses.—Ipecac is used chiefly for its emetic and expectorant properties. It is claimed by some to be of great value in epidemic dysentery. In the form of Dover's powder it is often given for its diaphoretic properties in the early stages of fevers.

Copper sulphate is described under astringents. In 4 gr. doses it is a useful emetic.

Zinc sulphate is described under astringents. As an emetic in 15 gr. doses it is useful in narcotic and other poisoning.

EMMENAGOGUES.

Drugs used to stimulate the menstrual flow.

Manganese Dioxide	**Aloes**
Myrrh	**Savin**
Cantharides	**Iron**
Potassium Permanganate	

Mangani dioxidum præcipitatum—precipitated manganese dioxide—occurs as a heavy fine black powder, insoluble in water. Dose, 4 grs.

Actions.—Large doses cause gastro-intestinal irritation. Medicinal doses are astringent and at the same time are supposed to have a specific action on the uterus, thereby increasing the menstrual flow.

Uses.—The dioxide is used successfully as an emmenagogue.

Myrrha—myrrh—is a gum resin from a tree growing in Africa and Arabia. It has a peculiar fragrant odor, more evident on burning. Dose, 7½ grs.

Preparations.—Tinctura myrrhæ—tincture of myrrh. Dose, 15 ♏. Tinctura aloes et myrrhæ—tincture of aloes and myrrh. Dose, 1 fl. dr. Pilulæ aloes et myrrhæ.

Actions.—Myrrh is antiseptic, astringent, stimulant and

expectorant. Its emmenagogue properties are supposed to come from its stimulating effect on uterus and ovaries.

Uses.—It is used principally as a gargle for sore mouth and throat, and for spongy gums, and as an application to indolent ulcers. Also to some extent in amenorrhea.

Cantharides is described under epispastics.

Potassium permanganate is described under antiseptics.

Aloes is described under cathartics.

Sabina—savin—is the tops of an evergreen shrub growing in northern countries. Dose, 7½ grs.

Preparations.—Fluidextractum sabinæ—fluidextract of savin. Dose, 5 ♏. Oleum sabinæ—oil of savin. Dose, 1 ♏.

Actions.—The oil is the active principle. Applied externally it is very irritating—causing redness, pain and vesication. Taken internally it irritates the gastro-intestinal and urinary tracts. It causes hyperemia of the uterus and ovaries and so increases menstruation. The pregnant uterus will contract under its administration.

Uses.—It may be used externally as a counterirritant. It is given to some extent to increase the menstrual flow; and has long been used with criminal intent to produce abortion.

Iron is described under tonics.

EXPECTORANTS.

Drugs which aid in expelling the contents of the bronchial tubes.

Ammonium Chloride	**Senega**
Ammonium Carbonate	**Eucalyptus**
Creosote	**Tar**
Terpin Hydrate	**Grindelia**
Squill	**Tartar Emetic**
Ipecac	

Ammonii chloridum—ammonium chloride or sal ammoniac—occurs as a white crystalline powder, odorless but having a saline taste. Dose, 7½ grs.

Actions.—Ammonium chloride increases the secretion of the bronchial and gastric mucous membranes.

Uses.—It is given largely as an expectorant either alone or in combination with other remedies, in bronchitis and pneumonia. In pharyngitis, laryngitis and bronchitis it is often given in the form of compressed tablets. It is recommended in gastritis associated with jaundice.

Ammonii carbonas—ammonium carbonate or hartshorn or sal volatile—occurs as hard, white, translucent masses, having a strong odor and a sharp saline taste. It loses its ammonia on exposure to the air. Dose, 4 grs.

Actions.—Ammonium carbonate has the stimulating effect on the heart and respiration that ammonia itself has. Large doses internally are very irritating. Medicinal doses increase bronchial secretion and render it more fluid.

Uses.—It is given as a quick stimulant in sudden collapse, and largely in cough mixtures as an expectorant.

Creosotum—creosote—is obtained from the distillation of wood—preferably beech. It is a yellowish, oily liquid, having a smoky odor and burning taste. Dose, 3 ♏.

Preparations.—Aqua creosotii. Dose, 2 fl. dr.

Actions.—Externally creosote is irritant, antiseptic and mildly anesthetic. From being excreted by the bronchial mucous membrane, it is a pulmonary antiseptic. Large doses irritate the kidneys.

Uses.—Small doses are sometimes given to relieve vomiting. Its chief use, however, is as a pulmonary antiseptic.

Terpini hydras—terpin hydrate—made from turpentine, occurs as colorless prisms, nearly odorless and having a slightly bitter taste. Dose, 2 gr.

Actions.—Terpin hydrate is antiseptic. It increases the secretion of the mucous membranes.

Uses.—Chiefly as a pulmonary antiseptic in bronchitis.

Scilla—squill or sea onion—is the bulb of a plant growing on the shores of the Mediterranean. Dose, gr. ii.

Preparations.—Acetum scillæ—vinegar of squill. Dose, ♏ xv. Fluidextractum scillæ—fluidextract of squill. Dose, 1½ ♏. Tinctura scillæ—tincture of squill. Dose, 15 ♏. Syrupus scillæ—syrup of squill. Dose, 30 ♏. Syrupus scillæ compositus—compound syrup of squill. Dose, 30 ♏.

Actions.—Squill like digitalis, slows the heart and raises blood pressure. It is a gastro-intestinal irritant, small doses sometimes causing nausea. Bronchial secretion and secretion from the kidneys are both increased. Large doses may cause renal irritation.

Uses.—Squill may be given in combination with other remedies as a diuretic in dropsies not due to renal disease. Its chief use, however, is as an expectorant in subacute and chronic bronchitis.

Ipecac is described under emetics.

Senega—senega—is the dried root of a plant growing in the United States. Dose, gr. xv.

Preparations.—Fluidextractum senegæ—fluidextract of senega. Dose, 10 to 20 ♏. Syrupus senegæ—syrup of senega. Dose, 1 fl. dr. Syrupus scillæ compositus—compound syrup of squill. Dose, 30 ♏.

Actions.—Senega is irritating to the gastro-intestinal tract. It is a pronounced stimulating expectorant.

Uses.—It is given in combination with other remedies in bronchitis to increase secretion.

Eucalyptus—eucalyptus—the dried leaves of a tree growing in subtropical countries. Dose, gr. 30.

Preparations.—Fluidextractum eucalypti—fluidextract of eucalyptus. Dose, 30 ♏. Oleum eucalypti—oil of eucalyptus. Dose, 8 ♏. Eucalyptol. Dose, 5 ♏.

Actions.—Externally eucalyptus is irritating to the skin.

It is antiseptic, being more energetic than phenol. Internally it stimulates the heart reflexly from the stomach. It is excreted through the bronchial mucous membrane and the kidneys and stimulates both.

Uses.—It is used in surgery as an antiseptic, and enters into numerous mouth washes and sprays. It is given for its stimulating and disinfecting action on the bronchial mucous membrane. Eucalyptus was at one time considered an antiperiodic. Its action as such, however, has been over-rated.

Pix liquida—tar—obtained by distilling pine wood. Dose, 7½ grs.

Preparations.—Syrupus picis liquidæ—syrup of tar. Dose, 1 fl. dr. Unguentum picis liquidæ—tar ointment and oleum picis liquidæ—oil of tar. Dose, 3 ♏.

Actions.—Tar applied locally is irritating; the vapor inhaled, is stimulating and disinfectant to the bronchial mucous membrane. It is antiseptic and disinfectant. Internally it stimulates the bronchial mucous membrane and the kidneys. Large doses cause hematuria.

Uses.—Externally, tar is used very largely in the treatment of skin diseases, especially those of a chronic type. Internally, it is used as an expectorant, generally combined with other remedies.

Grindelia—grindelia—the dried leaves and flowering tops of two varieties of a plant growing in western United States. Dose, 30 gr.

Preparation.—Fluidextractum grindeliæ—fluidextract of grindelia. Dose, 30 ♏.

Actions.—Grindelia increases bronchial and urinary secretion, and also relaxes the muscular coats of the bronchi.

Uses.—It is used chiefly as a remedy in spasmodic asthma, but may be given with other remedies as an expectorant in subacute and chronic bronchitis.

Tartar emetic is described under emetics.

QUESTIONS.

Define emetic.
Give the list of them.
Method of using apomorphine as an emetic.
Action and uses of ipecac. Dose.
Define emmenagogue.
Action of manganese di xide. Dose.
Uses of myrrh.
Action and use of savin.
Define expectorant and give list of them.
Action, uses, and dose, ammonium chloride, carbonate and creosote.
What is creosote obtained from.
Action, use and dose of squill.
Uses of eucalyptus.
Action, use and preparations of tar.

CHAPTER XXVI.

HYPNOTICS.

DRUGS used to produce sleep resembling natural sleep.

Trional	**Hyoscine**
Sulphonal	**Opium**
Bromides	**Paraldehyde**
Chloral	**Chloralamide**

Trional—sulphonethylmethane—is a synthetic compound occurring as colorless, odorless, crystalline scales, having a bitter taste in solution. Dose, 15 gr.

Actions.—Trional is a prompt hypnotic. It is said to have no unpleasant after effects or to be depressing to the heart.

Uses.—It is given in insomnia from whatever cause, and as a sedative to delirious or insane patients.

Sulphonal—sulphonmethane—is a synthetic compound, occurring as colorless, inodorous, nearly tasteless crystals, only slightly soluble in water. Dose, 15 gr.

Actions.—Sulphonal is a sure hypnotic, though slower in its action than trional. Some depression is likely to follow its administration.

Uses.—It is given solely to produce sleep.

Bromides are described under antispasmodics.

Chloral is described under antispasmodics.

Hyoscinæ hydrobromidum—hyoscine hydrobromide—is the hydrobromide of an alkaloid obtained from hyoscyamus or henbane. Dose, $\frac{1}{100}$ gr.

Actions.—Hyoscine paralyzes accommodation and dilates the pupil of the eye. It is powerfully depressant to the brain and hence hypnotic.

Uses.—It is used chiefly as a hypnotic for the insane, in delirium tremens and in various nervous conditions.

Opium is described under antispasmodics.

Paraldehydum—paraldehyde—is a synthetic compound occurring as a colorless liquid, having a very characteristic odor and a burning, disagreeable taste. Dose, 30 ♏.

Actions.—Paraldehyde is antiseptic. Its chief action however is hypnotic.

Uses.—Because of its disagreeable odor and taste it is rarely given but in hospitals for the insane.

Chloralformamidum—chloralamide—is a synthetic compound occurring as colorless crystals, without odor, but having a bitter taste. Dose, 15 gr.

Actions.—Chloralamide is a cerebral depressant, and will produce sleep slowly, though with less certainty than chloral.

Uses.—It is used altogether as a hypnotic. In the presence of pain it has little or no effect.

INTESTINAL ANTISEPTICS.

Drugs used to check intestinal fermentation and decomposition.

Beta naphthol	**Bichloride of Mercury**
Salol	**Oil of Turpentine**
Bismuth Salts	**Thymol**
Salicylic Acid	**Sulphocarbolates**

Beta naphthol—naphtol—is obtained from coal tar. Dose, 4 gr.

Actions.—Beta naphthol is antiseptic and irritant. Large doses produce acute nephritis.

Uses.—Externally it is used in ointments, in the treatment of parasitic skin diseases. It is used largely internally as an intestinal antiseptic.

Phenylis salicylas—phenyl salicylate or salol—is made by the union of salicylic and carbolic acids. Dose, 7½ grs.

Actions.—In the intestines, salol is split into salicylic and carbolic acids, so that its action is really the combined actions of these two drugs. It is therefore antipyretic and an intestinal antiseptic.

Uses.—It is sometimes given in rheumatism, but is used chiefly as an intestinal antiseptic in acute diarrhea. Because of its excretion by the kidneys, it is a urinary antiseptic and of value in certain infections.

Bismuth salts are described under astringents.

Salicylic acid is described under antipyretics.

Bichloride of mercury is described under antiseptics.

Oil of turpentine is described under anthelmintics.

Thymol—thymol—is obtained from the volatile oil of a plant growing in many parts of the world. Dose, 2 gr.

Actions.—Its actions are very similar to those of carbolic acid, though it is less toxic. As an antiseptic it is more powerful. It will arrest fermentation in the alimentary canal and is an efficient anthelmintic against a certain round worm of the small intestine—the ankylostoma duodenale.

Uses.—Thymol enters into many antiseptic solutions. It may be used as an intestinal antiseptic and to kill the parasite spoken of above.

Thymolis iodidum—aristol. A powder made directly from thymol, thymolis iodidum—thymol iodide or aristol, is very largely used in surgery as a dusting powder.

Sodii phenolsulphonas—sodium phenolsulphonate or sodium sulphocarbolate. Dose, 4 grs. **Zinci phenolsulphonas—zinc phenolsulphonate or zinc sulphocarbolate.** Dose, 2 gr. These preparations are formed by the combination of sulphuric acid, phenol and sodium carbonate, and, of sulphuric acid, phenol and zinc oxide respectively.

Actions.—The action of the sulphocarbolates is very similar to that of carbolic acid, though they are less irritating and less

poisonous. Externally in solution they are mildly antiseptic. Internally they act as intestinal antiseptics. The zinc preparation is much more astringent than the sodium.

Uses.—They are used externally as applications to diseased mucous membranes; internally to check fermentation in the alimentary canal.

OXYTOCICS.

Drugs used to establish or increase uterine contractions.

Ergot	**Quinine**
Hydrastis	**Cotton Root**

Ergota—ergot—is a fungus growing on the heads of various grains—particularly that of rye. It comes chiefly from Spain and Russia. Dose, 30 gr.

Preparations.—Fluidextractum ergotæ—fluidextract of ergot. Dose, 30 ♏. Extractum ergotæ—extract of ergot. Dose, 7½ grs. Vinum ergotæ—wine of ergot. Dose, 2 fl. dr.

Actions.—Ergot increases peristaltic action. There is a general contraction of the arteries of the body with a consequent rise of blood pressure. Due to this arterial contraction, it is hemostatic. Ergot will cause contractions of the pregnant or recently emptied uterus.

Uses.—Given chiefly postpartum to cause contractions of the uterus and so prevent hemorrhage. It may, however, be used in other hemorrhages—as in those from the stomach, nose, lungs, kidneys, or intestines.

Chronic poisoning or ergotism shows itself in two forms—the gangrenous and the convulsive. In the former, gangrene results in various parts of the body from the continued spasm of the arteries. In the latter, after numerous nervous symptoms, such as itching or tingling of the skin, anesthesia, or disturbances of vision, clonic convulsions begin.

Hydrastis—hydrastis (golden-seal)—the dried root of a plant growing in North America. Dose, 30 gr.

Preparations.—Fluidextractum hydrastis—fluidextract of hydrastis. Dose, 30 ♏. Tinctura hydrastis—tincture of hydrastis. Dose, 1 fl. dr. Glyceritum hydrastis—glycerite of hydrastis. Dose, 30 ♏. Hydrastina—hydrastine. Dose, gr. $\frac{1}{5}$. Hydrastininæ hydrochloridum—hydrastinine hydrochloride. Dose, gr. ½.

Actions.—Applied to mucous membrane, hydrastis causes contractions of dilated blood-vessels. Taken internally it is stomachic. There is a general rise of blood pressure due to contraction of arterioles. Hydrastis is said to have a decided antiperiodic action. Much doubt has been cast on its supposed ability to cause contractions of the pregnant uterus.

Uses.—Hydrastis is used largely as an application in chronic inflammations of various mucous membranes. It may be given internally for hemorrhage—particularly hemorrhage from the uterus.

Quinine is described under antiperiodics.

Gossypii cortex—cotton root bark—the dried bark of the root of a plant growing in subtropical countries. Dose, 30 gr.

Actions.—Very similar to those of ergot.

Uses.—Largely as a hemostatic in uterine hemorrhage from various causes.

QUESTIONS.

Define hypnotic.
Give the names of them.
Source, action and uses of, and official names of trional and sulphonal.
Define intestinal antiseptic.
Give the list of them.
Official name of salol.
Action and use of beta-naphthol and salol.
Action and use of thymol.
Define oxytocics.
Name the oxytocics.
What is ergot?
What are its actions, use and dose?
Action, use and dose of hydrastis.

CHAPTER XXVII.

PARASITICIDES.

DRUGS applied locally to destroy parasites of the cutaneous surfaces.

Antiseptics	**Sulphur**
Chrysarobin	**Pyrogallic Acid**
Mercury	**B. Naphthol**
Ichthyol	**Iodine**
	Staphisagria

Antiseptics of all kinds are used more or less as parasiticides. In this class come mercury, boric acid, carbolic acid, etc.

Chrysarobinum—chrysarobin—is a neutral principle from a substance found deposited in the wood of a tree growing in East India. Dose, ½ gr.

Preparation.—Unguentum chrysarobini—chrysarobin ointment.

Actions.—Chrysarobin is very irritating to skin and mucous membrane. It will destroy organisms of a fungous type. It stains skin and clothing a yellowish-brown or purple. The stains may be removed by a weak solution of chlorinated lime or caustic soda, if no soap or alkali be used first.

Uses.—Principally as a parasiticide in the various forms of tinea, and for its stimulating action in chronic skin affections.

Mercury is described under alteratives. Blue ointment (unguentum hydrargyri) and ammoniated mercury ointment (unguentum hydrargyri ammoniati) are the two preparations most generally used as parasiticides.

Ichthyol is described under alteratives.

Sulphur is described under cathartics.

Pyrogallol—pyrogallic acid—is obtained by heating gallic acid.

Actions.—Internally pyrogallic acid is a poison causing destruction of the red blood corpuscles and intense irritation of the kidneys. These poisonous effects may come through absorption through the skin. The mineral acids act as antidotes. Pyrogallic acid is irritant to the skin and decidedly antiseptic. It leaves a dark stain on skin and clothing.

Uses.—It is seldom or never given internally, and even externally should be used cautiously because of danger of absorption. Its chief use is in the treatment of parasitic skin affections such as pityriasis versicolor and the various forms of tenia. It has also been used extensively in the treatment of psoriasis.

Beta-naphthol is described under intestinal antiseptics.

Iodine is described under alteratives.

Staphisagria—larkspur. The ripe seed of a plant growing in the countries bordering on the Mediterranean sea, particularly France and Italy. Dose, 1 gr.

Preparations.—Fluidextractum staphisagriæ—fluidextract of stavesacre seed. Dose, 1 ♏. Also there is an unofficial tincture.

Uses.—The drug has been used as an emetic and cathartic, but owing to its poisonous action, which is similar to that of aconite, it is but little used internally. In the form of tincture it is much used externally for killing lice and other vermin infecting the human body.

RUBEFACIENTS.

Drugs or preparations which applied to the skin produce redness.

Ammonia	**Camphor Liniment**
Iodine	**Chloroform Liniment**
Capsicum	**Turpentine Liniment**
Mustard	

Ammonia is described under "ant-acids."

Iodine is described under "alteratives."

Capsicum—capsicum (cayenne pepper)—the dried ripe fruit of a shrub growing in tropical America. Dose, 1 gr.

Preparations.—Fluidextractum capsici—fluidextract of capsicum. Dose, 1 ♏. Oleoresina capsici—oleoresin of capsicum. Dose, 1 ♏. Tinctura capsici—tincture of capsicum. Dose, 8 ♏. Emplastrum capsici—capsicum plaster.

Actions.—Applied locally, capsicum produces redness and burning, and if the action is prolonged, will destroy the cuticle. Small doses internally are stomachic; large doses produce gastro-enteritis and irritation of the kidneys and bladder.

Uses.—Capsicum enters into many rubefacient liniments. Internally it is given for its stomachic properties. It is especially useful in the atony of the stomach found in alcoholics.

Sinapis alba (white mustard) and sinapis nigra (black mustard) are the seeds from two varieties of a plant cultivated in Europe.

Preparations.—Charta sinapis—mustard paper. Oleum sinapis volatile—volatile oil of mustard.

Actions.—Externally mustard is rubefacient and counter-irritant. Prolonged application may produce blistering. Internally in two dram doses, mustard is emetic.

Uses.—Because of its counter-irritant properties, mustard is used to relieve pain. Stirred into warm water, it is often given as an emetic.

STOMACHICS.

Sometimes called "bitter tonics," are drugs or preparations which increase appetite and digestion by stimulating the production of gastric juice.

Gentian	**Dandelion**
Cardamom	**Serpentaria**
Quassia	**Prunus Virginiana**
Calumba	**Cinchona**
	Nux Vomica

Gentiana—gentian—the dried root of a plant growing in central and southern Europe. Dose, 15 gr.

Preparations.—Extractum gentianæ—extract of gentian. Dose, 4 gr. Fluidextractum gentianæ—fluidextract of gentian. Dose, 15 ♏. Tinctura gentianæ composita—compound tincture of gentian. Dose, 1 fl. dr.

Actions.—By irritation of the terminal nerves (gustatory) in the mouth, the flow of saliva and gastric juice is reflexly stimulated by gentian as by all the simple bitters. Hyperemia of the mucous membrane of the stomach is produced and the flow still further augmented. An artificial hunger arises in consequence and digestion is improved.

Uses.—Gentian may be given in all debilitated conditions, where the appetite is poor and digestion sluggish. It should, however, be avoided in acute or subacute inflammation of the stomach.

Cardamomum—cardamom. The dried ripe fruit of a plant growing in the East. Dose, 15 gr.

Preparations.—Tinctura cardamomi—tincture of cardamom. Dose, 1 fl. dr. Tinctura cardamomi composita—compound tincture of cardamom. Dose, 1 fl. dr.

Actions.—Like gentian, cardamom is stomachic. It is in addition a carminative.

Uses.—It is given largely as a simple bitter and in colic due to flatulence. It is also a valuable flavoring agent.

Quassia is described under anthelmintics.

Calumba—calumba. The dried root of a plant growing in eastern Africa. Dose, 30 gr.

Preparations.—Fluidextractum calumbæ—fluidextract of calumba. Dose, 30 ♏. Tinctura calumbæ—tincture of calumba. Dose, 1 fl. dr.

Actions.—Like all simple bitters, calumba increases the flow of saliva and gastric juice.

Uses.—It may be given in debilitated conditions to increase appetite and digestion.

Nux vomica—nux vomica—is the seed of a small tree growing in India and the East Indian Islands. It should contain not less than 1.25 per cent. of its alkaloid, strychnine. Dose, 1 gr.

Preparations.—Extractum nucis vomicæ—extract of nux vomica. Dose, ¼ gr. Fluidextractum nucis vomicæ—fluidextract of nux vomica. Dose, 1 ♏. Tinctura nucis vomicæ—tincture of nux vomica. Dose, 10 ♏. Strychnina—strychnine, an alkaloid of nux vomica is described under cardiac tonics.

Actions.—Nux vomica stimulates the appetite and digestion, and by directly stimulating the muscular coat of the bowel increases peristalsis. Because of the strychnine it contains, the heart and respiration are stimulated. Large doses give the symptoms of strychnine poisoning.

Uses.—Nux vomica is given largely as a bitter tonic. It is useful combined with hydrochloric acid and some other bitter, such as gentian, in impaired digestion. It is often given as a cardiac tonic and for its general tonic effect in depressed bodily conditions.

Taraxacum—dandelion. The dried root of a plant growing in Europe and the United States. Dose, 120 grs.

Preparations.—Extractum taraxici—extract of taraxacum. Dose, 15 gr. Fluidextractum taraxaci—fluidextract of taraxacum. Dose, 2 fl. dr.

Actions.—Chiefly that of a simple bitter.

Uses.—It is given to increase appetite and digestion.

Serpentaria—virginia snakeroot. The dried stalk and root of a plant growing in the United States. Dose, 15 grs.

Preparations.—Fluidextractum serpentariæ—fluidextract of serpentaria. Dose, 15 ♏. Tinctura serpentariæ—tincture of serpentaria.

Actions.—Besides being a simple bitter, serpentaria is a stimulant expectorant. Large doses cause gastro-intestinal irritation.

Uses.—It may be given as a stomachic, but is more generally used in capillary bronchitis and pneumonia as an expectorant.

Prunus virginiana—wild cherry. The bark of a tree growing in the eastern United States. Dose, 30 gr.

Preparations.—Fluidextractum pruni virginianæ—fluidextract of wild cherry. Dose, 30 ♏. Infusum pruni virginianæ—infusion of wild cherry. Dose, 2 fl. oz. Syrupus pruni virginianæ—syrup of wild cherry. Dose, 1 fl. dr.

Actions.—Wild cherry is stomachic and sedative.

Uses.—It is useful in debilitated conditions, but is more generally given in cough mixtures.

Cinchona is described under antiperiodics.

QUESTIONS.

Define parasiticide.
Name them.
What is the action and use of pyrogallic acid.
Define rubefacient.
Name the rubefacients.
Action and use of capsicum.
Define stomachics.
Name the stomachics.
Action and use of gentian and cardamom.
Action, use and dose of nux vomica.

CHAPTER XXVIII.

TONICS.

DRUGS used to increase the nutrition of the body.

Iron	**Stomachics**
Manganese	**Hypophosphites**

Ferrum—metallic iron—is official as fine wire and as reduced iron (ferrum reductum).

Ferrum reductum—reduced iron—is formed by the action of hydrogen on ferric oxide. It comes as a fine greyish-black powder without odor or taste. Dose, 1 gr.

The preparations of iron are so numerous that only a few of the more important ones will be described.

Ferri sulphas—ferrous sulphate (copperas or green vitriol)—occurs as large, pale, bluish-green prisms having a styptic taste. Dose, 3 grs.

Preparations. — Mistura ferri compositus — compound iron mixture or Griffith's mixture. Dose, 4 fl. dr. Pilulæ ferri carbonatis—pills of ferrous carbonate or Blaud's pills. Dose, 1 or 2 pills.

Massa ferri carbonatis—mass of ferrous carbonate or Vallet's mass. Dose, 4 gr.

Syrupus ferri iodidi—syrup of ferrous iodide. Dose, 15 ♏.

Liquor ferri chloridi—solution of ferric chloride—containing 29 per cent. of the salt. Dose, 1½ ♏.

Tinctura ferri chloridi — tincture of ferric chloride. Dose, 8 ♏.

Liquor ferri et ammonii acetatis—solution of iron and ammonium acetate or Basham's mixture. Dose, 4 fl. dr.

Liquor ferri subsulphatis—solution of ferric subsulphate or Monsel's solution. Dose, 3 ♏.

Ferri hydroxidum cum magnesii oxido—ferric hydroxide with magnesium oxide or arsenic antidote. Dose, 4 fl. oz.

Syrupus ferri, quininæ et strychninæ phosphatum—syrup of iron, quinine and strychnine phosphate. Dose, 1 fl. dr.

Elixir ferri quininæ et strychninæ phosphatum—elixir of iron, quinine and strychnine phosphate. Dose, 1 fl. dr.

Ferri et strychninæ citras—iron and strychnine citrate. Dose, 2 gr.

Ferri et quininae citras—iron and quinine citrate. Dose, 4 gr.

Actions.—Iron and its salts applied to the unbroken skin have no effect; applied to mucous membranes or abraded surfaces they are astringent and hemostatic. Solutions of the ferrous and ferric salts are more or less antiseptic and deodorant. Ferrous sulphate (copperas) is perhaps the most used in this way. Internally iron and its salts blacken the tongue and teeth. The tincture of ferric chloride attacks the enamel, even when much diluted because of the excess of acid, and so should be given through a glass tube. In the stomach, iron is irritant and astringent. In whatever form given, it is probably changed in the stomach into the chloride and later into albuminates. The astringent effect is noticed in the intestines—the secretions are lessened and constipation often results. Iron is supposed to be absorbed from the intestines as an albuminate and enters directly into the formation of new red blood corpuscles. This is true only in impoverished states of the blood, as in secondary anemias and chlorosis. Nutrition is improved and all the vital processes quickened, so that iron is spoken of as "tonic."

Uses.—Iron, particularly Monsel's solution, was formerly much used as a local hemostatic. Ferric chloride in solution or tincture, diluted, is often painted on the throat in pharyngitis

or tonsillitis. Internally iron is sometimes given for gastric and intestinal hemorrhage and for diarrhea. The ferric hydroxide with magnesium oxide makes a very valuable antidote in arsenical poisoning. The insoluble arsenite is formed, and this can be gotten rid of by some simple purgative. The chief use of iron is in the secondary anemias and chlorosis to increase the hemoglobin, and number of red blood corpuscles. In pernicious anemia, leukemia, Hodgkin's disease and exophthalmic goitre it has been found useless.

Basham's mixture (liquor ferri et ammonii acetatis) and tincture of ferric chloride are frequently given in chronic Bright's disease. The benefit derived comes probably from its tonic effect and not from any specific action on the kidneys.

Manganese is described under emmenagogues.

Stomachics, such as nux vomica, gentian, cardamom, etc., increase appetite and digestion. The general nutrition is improved, hence they are tonic.

Calcii hypophosphis—calcium hypophosphite. Dose, 7½ gr.

Sodii hypophosphis—sodium hypophosphite. Dose, 15 gr.

Potassii hypophosphis—potassium hypophosphite. Dose, 7½ gr.

Ferri hypophosphis—ferric hypophosphite. Dose, 3 gr.

Mangani hypophosphis — manganese hypophosphite. Dose, 3 gr.

Syrupus hypophosphitum—syrup of hypophosphites. Dose, 2 fl. dr.

Syrupus hypophosphitum compositus—compound syrup of hypophosphites. Dose, 2 fl. dr.

Actions.—The hypophosphites are supposed by many to have some special influence on nutrition, especially where poor nutrition is the outcome of a depressed nervous state, as in neurasthenia.

Uses.—They are given largely as tonics in neurasthenia, in tuberculosis and in various other cachectic conditions. They form the basis of a great many of the proprietary tonics on the market.

QUESTIONS.

Define tonic.
Name the tonics.
Actions and uses of the iron salts.
Actions and uses of the hypophosphites.

CHAPTER XXIX.

THE MEASUREMENT OF HEAT AND SPECIFIC GRAVITY.

ALL bodies expand when heated and contract when cooled, and advantage is taken of this natural phenomenon, in measuring heat by means of the thermometer.

Mercury or colored alcohol is enclosed in a glass tube of fine bore, and its contraction or expansion caused by changes of temperature causes it to fall or rise in the tube. The fall and rise is read in figures by numbering the regularly placed lines attached to the tube, the spaces from line to line being called degrees.

There are two scales in use, the Fahrenheit and the Centigrade. The former is in common use in America, but in all scientific books, including the Pharmacopœia, the Centigrade scale is used. They are both practical applications of the same principle, the one in an accidental, the other in a well calculated manner.

Mercury is the most suitable fluid for the purpose, registering a very high degree without boiling and a very low one without freezing. It will freeze, however, at 40° below zero Fahrenheit, and for very low temperatures alcohol is used.

The difference between the freezing and boiling points of the two scales may be thus explained: A thermometer tube was attached to a thin metallic plate and the plate graduated into several hundred degrees. The instrument was plunged into freezing water and the mercury came to rest at the number 32, and it was adopted as the freezing point. The instrument was then plunged into boiling water and the mercury came to rest at 212, which figures were selected as the boiling point. Later the

Centigrade scale was arranged in the following way: The tube was attached to an unnumbered scale. The point at which the mercury came to rest in freezing water, was marked zero and that at which it came to rest in boiling water was marked 100. There being 100° between the freezing and boiling points the scale was called the Centi-grade (100 gradations) thermometer.

The rules for translating the degrees of one scale into degrees of the other are easier to master if explained. They are based upon the relative difference in the number of degrees between freezing and boiling.

The two scales placed side by side are:

It will be seen that from freezing to boiling, Fahrenheit, there are 180°; while from freezing to boiling, Centigrade, there are but 100°. These numbers reduced are as 1.8 to 1, so that every time a Centigrade thermometer rises or falls one degree, the Fahrenheit rises or falls 1.8 degrees.

To change a Centigrade degree to the corresponding Fahrenheit degree:

Multiply the degree by 1.8, and if it is above freezing, add that number to the freezing point which is 32. If it is below freezing subtract it from 32.

To change Fahrenheit to Centigrade:

First find how many degrees above freezing (32) your figure is and divide by 1.8. By a rule of three sum this is made plain either way.

The figures 9 and 5 are sometimes used, being the boiling points of the two scales, reduced to the lowest whole numbers.

10° CENTIGRADE TO FAHRENHEIT.

1 : 1.8 : : 10° C. : x = 50° F.

$$1)\overline{18.0} \quad (10)$$

18. + 32 = 50 = x

or

5 : 9 : : 10° C. : x = 50° F.

$$5)\overline{90} \quad (10)$$

18 + 32 = 50 = x

50° FAHRENHEIT TO CENTIGRADE.

1.8 : 1 : : 50° F. : x = 10° C.

$$1.8)\overline{18.0} \quad (18) \qquad \overline{32}$$

18° above freezing.

10 = x

or

9 : 5 : : 50° F. : x = 10° C.

$$9)\overline{90} \quad (18) \qquad \overline{32}$$

18° above freezing.

10° C. = x

Specific Gravity.—Specific gravity is the comparative weight of equal bulks, water being used as the standard of comparison.

When we speak of the weight of bodies in their natural condition, we speak of them as being lighter or heavier than water, bulk for bulk.

The most exact way to take the specific gravity of a fluid is by means of the specific gravity bottle. The specific gravity of water is 1. A bottle is so marked, that when filled exactly to that mark, it will hold 1000 grains of water.

If the bottle is filled to the mark with ether it will be found to weigh $\frac{725}{1000}$ of that number of grains and if the fraction is written decimally, thus, 0.725, they represent its specific gravity. Taking an equal bulk of chloroform we find it weighs 490 grains more than the water or 1490 grains and pointing off three places, thus 1.490, we have the specific gravity of chloroform.

In taking the specific gravity of urine, an instrument called a urinometer is used. It is made of glass, resembling in form

a thermometer, the blub being larger. The tube is graduated and the bulb loaded sufficiently with shot to cause the tube to float upright in the urine when immersed in it. The specific gravity of the urine is shown by the figure at the surface of the urine in which the instrument is floated.

QUESTIONS.

Give boiling and freezing points F. and C.
How are F.° changed to C.° and vice versa?
How is specific gravity taken with a specific gravity bottle?

CHAPTER XXX.

TOXICOLOGY.

TOXICOLOGY is the study of the effects of poisons and their antidotes.

By a poison is meant any substance, which, if introduced into the animal system, will produce painful or dangerous disorder or death. The study is more particularly directed to the effects and antidotes to the effects of those drugs which, because they are odorless or tasteless, or because the fatal dose is very small and their action very rapid, are used by suicides and murderers, besides the deaths occasioned by their mistaken administration by physicians, pharmacists and nurses.

The nurse should be able to distinguish, in a general way, the symptoms caused by poisoning.

The action of a poison is sudden. The symptoms of irritation in the stomach, when present, are violent. The disturbances to the heart, lungs and brain, are more profound, or become so much more rapidly than in the course of ordinary disease. Muscular contortions are much more violent and the symptoms reach a higher point much more rapidly than they do in the course of ordinary disease.

Poisons are divided into two classes, irritants and narcotics The irritant poisons take effect immediately on coming into contact with the digestive tract. They cause discomfort and pain in the mouth, throat and stomach, the effects, in the case of a volatile poison like ammonia, extending even to the nasal passages. The coatings of the parts with which the poison comes in contact, are partly or wholly destroyed. Such severe treatment of vital parts causes faintness and shock, and altogether

the effects are such and so plainly to be seen, that the question instinctively springs to the lips of the observer, "What have you been taking?"

The contrary is the case in poisoning by narcotics. They do not act until they have entered the circulation and the symptoms do not appear until some time has passed since the swallowing of the poison, when it is too late to try to arrest its action by emptying the stomach.

Narcotic poisons, besides some characteristic effects produced by some of them by which the name of the drug employed may be discovered, all produce drowsiness which rapidly passes beyond the control of the patient, unconsciousness, coma and death following in rapid order unless restoratives are applied.

ANTIDOTES.

A physician should be sent for immediately upon the discovery of a poisoned person.

Antidotes are of two kinds, chemical and physiological. When possible, the nature of the poison should be ascertained in order that the poisoned one may be more intelligently treated. This it is often impossible to do, except the symptoms are decidedly characteristic. The patient may be unconscious, may not wish to tell or perhaps has taken the poison accidentally and does not know.

It is the custom, especially if a physician is at hand, even in the case of corrosive poisons to empty the stomach by the use of the stomach tube or an emetic.

The most commonly used emetic, because commonly at hand, is mustard. A tablespoonful of it, mixed with a glass of warm water, will usually act as an emetic, soon after it is swallowed. Large draughts of warm water or salt and water also act as emetics. Other substances and means will occur to a physician according to circumstances.

If the poison used is known to have been a chemical substance and its name can be learned, a chemical antidote may be used. By a chemical antidote is meant one which when given to the patient will form an insoluble compound, with the substance that has been swallowed. Obviously this will render its further action, for the time being at any rate, impossible; for a substance insoluble in the stomach cannot be absorbed.

This treatment should be followed by an emetic, before the poison can be rendered soluble again by the secretions of the stomach. As an instance: In case of lead poisoning if magnesium sulphate is given it will form the insoluble lead sulphate and its absorption arrested. But excepting the arsenical antidote which is mentioned further on, the use of chemical antidotes should be attempted only by those who are familiar with the nature of chemical reactions.

A physiological antidote must counteract and overcome the effects which are being produced by a drug which has passed into the circulation, beyond the reach of emetics and chemical antidotes.

The administration of such antidotes, except the ordinary stimulants, is the business of the physician and only concerns the nurse as the faithful executor of his directions. The common stimulants alluded to are strong coffee, brandy, and ammonia. Constant efforts should be made, in the case of narcotic poisoning, to prevent the patient from yielding to drowsiness by enforced walking about, dousing with cold water, slapping, etc.

The following classification * of poisons is a convenient one.

1. **Drugs causing death in a few minutes:** Bromine, chlorine, carbonic acid gas, prussic or hydrocyanic acid and all cyanides, oxalic acid, strychnine, hydrochloric, nitric, nitro-hydrochloric and sulphuric acids.

* Prof. D. M. R. Culbreth, M. D., Druggists Circular.

2. **Drugs known as corrosive irritants:**

a. Causing local destruction of tissues with nausea and vomiting: Ammonia water, solutions of potassa or soda, lye, lime, carbolic, chromic, hydrochloric, nitric, nitrohydrochloric and sulphuric acids.

b. Irritants causing pain, vomiting and purging: Cantharides, antimony salts, arsenic, copper salts, lead salts, zinc salts, phosphorus, mushrooms.

3. **Drugs affecting the nervous system:**

a. Narcotics, producing insensibility as the chief symptom, preceded by more or less cerebral excitement: Alcohol, chloral, chloroform, ether, opium.

b. Delirients, producing delirium as a prominent symptom: Belladonna, camphor, cannabis indica, cocaine, hyoscyamus and strammonium.

c. Convulsives, producing violent muscular paroxysms: Narcotine, nux vomica, picrotoxine, strychnine.

d. Multiple disturbers, producing complex nervous phenomena: Aconite, conium, digitalis, lobelia, physostigma, tobacco.

The poisonous effects of the following named substances is due to the arsenic in them.

Paris green, Scheele's green, green wall paper, common arsenic, ratsbane, rough on rats, Fowler's solution, Donovan's solution.

The following list of things are recommended as convenient to have at hand, for use in poison cases.

A stomach pump (6 feet of ½ inch rubber tubing).

A hypodermic syringe.

A bleeding lancet.

A 4 ounce box of mustard.

One dozen 20 grain zinc sulphate powders.

One dozen 30 grain powders of ipecac.

One tube of apomorphine tablets.

The official arsenical antidote, consisting of 2 oz. of magnesium oxide and 2½ oz. of solution of tersulphate of iron. These are to be kept separately until needed. At that time, mix the magnesia in a pint or more of water and stir till mixed. (It will not dissolve.) Then add the iron solution and stir again. Give as much as the patient can be made to swallow, using the stomach tube if necessary.

QUESTIONS.

What is meant by a chemical and what by a physiological antidote?
Name some of the drugs which cause death in a few minutes.
Name the corrosive irritants.
Name the drugs causing pain, vomiting and purging.
Name the narcotics, delirients and convulsives.
What is the official antidote for arsenical poisoning?

EPITOME

OF THE

OFFICIAL DRUGS, PREPARATIONS, AND CHEMICALS; THE LATIN NAME; THE ENGLISH NAME; THE SYNONYM, IF THERE IS ONE; THE PART OF THE PLANT USED OR ORIGIN IF A CHEMICAL; WITH THEIR MEDICINAL USES AND DOSES.

A.

Absin'thium. Absinthium. Wormwood. The leaves and tops of the plant. Stimulant. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Aca'cia. Acacia. Gum Arabic. The gummy exudation from the tree. Demulcent. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Acetanili'dum. Acetanilid. Antifebrin. One of the derivatives of coal-tar. Antipyretic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Aceton'um. Acetone. A liquid containing not less than 99 per cent., by weight, of absolute acetone. It should be kept in well-closed vessels in a cool place, remote from lights or fire. Nervine. Dose, 5 to 15 ♏, or 0.325 to 1 c.c.

Acetphenetedi'num. Phena'cetine (Trade name). Acetphenetidine. A phenol derivative. Antipyretic and analgesic. Dose, 0.500 gm., or 7½ grains.

Ace'tum o'pii. Vinegar of opium. Black drop. Prepared from gum opium. Anodyne. Dose, 10 ♏, or 0.65 c.c.

Ace'tum scil'læ. Vinegar of squill. Prepared from the sliced bulb. Expectorant; emetic. Dose, 10 to 30 ♏, or 0.65 to 2.0 c.c.

Ac'idum ace'ticum. Acetic acid. By distillation of wood. It forms the class of salts called acetates. Thirty-six per cent.

Ac'idum ace'ticum dilu'tum. Diluted acetic acid. Ten per cent.

Ac'idum ace'ticum glaci'ale. Glacial or absolute acetic acid. (These three are the same acids, differing in strength.)

Ac'idum arseno'sum. Arsenous acid. White arsenic. Alterative. Dose, $\frac{1}{60}$ to $\frac{1}{30}$ gr., or 0.001 to 0.003 gm.

Ac'idum benzo'icum. Benzoic acid. Made from gum benzoin. Stimulant; expectorant. Dose, 10 to 30 grs., or 0.65 to 2.0 gm.

Ac'idum bo'ricum. Boric or boracic acid. Made from borax by the action of hydrochloric acid. Antiseptic. Dose, 10 to 30 grs., or 0.65 to 2.0 gm.

Ac'idum camphor'icum. Camphoric acid. An acid obtained by treatment of camphor. Anhidrotic. Dose, 1 gm., or 15 gr.

Ac'idum carbol'icum. Carbolic acid. Phenol. Distilled from coal-tar. Used in nausea. Dose, 1 to 3 ♏, or 0.065 to 0.195 c.c.

Ac'idum carbol'icum cru'dum. Crude carbolic acid. Used as a disinfectant.

Ac'idum chro'micum. Chromic acid. Originates in combination as an ore. Escharotic.

Ac'idum cit'ricum. Citric acid. Prepared from lemon juice. Refrigerant. Dose, 10 to 30 grs., or 0.650 to 2.0 gm.

Ac'idum gal'licum. Gallic acid. Prepared from tannic acid. Astringent. Dose, 5 to 10 grs., or 0.325 to 0.650 gm.

A'cidum hydriod'icum dilu'tum. Diluted hydriodic acid. Obtained from potassium iodide by the action of tartaric acid. Alterative. Dose, 0.500 c.c., or 8 ♏.

Ac'idum hydrobro'micum dilu'tum. Diluted hydrobromic acid. From potassium bromid by action of sulphuric acid. Hypnotic. Dose, ½ to 2 drams, or 2.0 to 8.0 c.c.

Ac'idum hydrochlo'ricum. Hydrochloric acid. Muriatic acid. 31.9 per cent. From sodium chlorid by action of sulphuric acid. Tonic. Dose, 5 to 10 ♏, or 0.325 to 0.650 c.c.

Ac'idum hydrochlo'ricum dilu'tum. Diluted hydrochloric acid. Ten per cent. Tonic. Dose, 10 to 30 ♏, or 0.650 to 2.0 c.c.

Ac'idum hydrocya'nicum dilu'tum. Two per cent. Diluted hydrocyanic acid. Prussic acid. Sedative. Dose, 1 to 3 ♏.

Ac'idum hypophosphoro'sum. Hypophosphorous acid. Composed of 30 per cent. acid and 70 per cent. of water.

Ac'idum hypophosphoro'sum dilu'tum. Diluted hypophosphorous acid. From phosphorus and lime, indirectly. Tonic. Dose, 10 to 60 ♏, or 0.650 to 4.0 c.c.

Ac'idum lac'ticum. Lactic acid. From fermented milk. Used to dissolve membranes.

Ac'idum ni'tricum. Nitric acid. Sixty-eight per cent. From potassium nitrate by sulphuric acid.

Ac'idum ni'tricum dilu'tum. Diluted nitric acid. Ten per cent. Tonic. Dose, 5 to 30 ♏, or 0.325 to 2.0 c.c.

Ac'idum nitrohydrochlo'ricum. Nitrohydrochloric acid. Nitromuriatic acid. Reaction between nitric and hydrochloric acids. Cholagogue. Dose, 1 to 5 ♏.

Ac'idum nitrohydrochlo'ricum dilu'tum. Diluted nitromuriatic acid. Cholagogue. Dose, 5 to 20 ♏.

Ac'idum ole'icum. Oleic acid. From oil by action of steam under pressure. It is used for preparing the oleates.

Ac'idum phospho'ricum. Phosphoric acid. Eighty-five per cent. From

phosphorus by nitric acid. Nerve tonic. Dose, 1 to 10 ♏, or 0.065 to 0.650 c.c.*

Ac'idum phospho'ricum dilu'tum. Ten per cent. Nerve tonic. Dose, 5 to 30 ♏, or 0.325 to 2.0 c.c.

Ac'idum salicyl'icum. Salicylic acid. From carbolic acid by action of sodium carbonate. Antiseptic. Dose, 5 to 10 grs., or 0.325 to 0.650 c.c.

Ac'idum stear'icum. Stearic acid. From solid fats by steam under pressure. For official glycerin suppositories.

Ac'idum sulphu'ricum. Sulphuric acid. Ninety-two per cent. From sulphur fumes, steam, and oxygen gas.

Ac'idum sulphu'ricum aromat'icum. Aromatic sulphuric acid. Ten per cent. Tonic. Dose, 5 to 10 ♏, or 0.325 to 0.650 c.c.

Ac'idum sulphu'ricum dilu'tum. Diluted sulphuric acid. Ten per cent. Tonic. Dose, 1 to 10 ♏, or 0.065 to 0.650 c.c.

Ac'idum sulphuro'sum. Sulphurous acid. Six per cent. Antiseptic. As a wash chiefly.

Ac'idum tan'nicum. Tannic acid. Extracted from nut-galls. Astringent. Dose, 1 to 10 grs., or 0.065 to 0.650 gm.

Ac'idum tartar'icum. Tartaric acid. From cream tartar. Refrigerant. Dose, 10 to 30 grs., or 0.650 to 2.0 gm.

Aconiti'na. Aconitine. An alkaloid obtained from aconite. Dose, 0.00015 gm., or $\frac{1}{400}$ grain.

Aconi'tum. Aconite. Monkshood. The root. Narcotic. Dose, ½ to 2 grs., or 0.030 to 0.130 gm.†

A'deps. Lard. From the abdomen of the hog. Used for making ointments.

A'deps benzoina'tus. Benzoinated lard. Lard impregnated with benzoin to preserve it. Used for making ointments.

A'deps la'næ. Hydrous wool-fat. The purified fat from the wool of the sheep. Used for making ointments.

Æ'ther. Ether. **Æ'ther fortior.** Strong ether. Ninety-six per cent. From alcohol by action of sulphuric acid. Anesthetic. Dose, 5 to 60 ♏, or 0.325 to 4.0 c.c.

Æther ace'ticus. Acetic ether. Ninety-eight per cent. From alcohol by action of acetic acid. Stimulant. Dose, 10 to 30 ♏, or 0.650 to 2.0 c.c.

Æthy'lis car'bamas. Ure'thane (Trade name). Ethyl carbamate. From the reaction between urea and alcohol. Hypnotic, 1 gm., or 15 grs.

Æthy'lis chlori'dum. Ethyl chloride. From alcohol by the action of hydrochloric acid. Anesthetic, both local and general.

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*Minims will probably continue to be used in measuring. But these equivalents are easily acquired by a little practice. As has been shown, it is not a matter of memory, but may be figured out in each instance mentally.

†Let the nurse remember how these figures are read: 2.0 gm. is two grams; 0.030 gm. is thirty thousandths of a gram, or, as we call it, thirty *milli*-grams.

Al'cohol. Alcohol. Distilled from whisky. Eighty-seven to ninety-one per cent. Stimulant. External use.

Al'cohol absolu'tum. Absolute alcohol. 99.9 per cent. Alcohol deprived of all its water. Stimulant. Dose, f ʒj, or 4.0 c.c.

Al'cohol deodora'tum. Deodorized alcohol. Ninety-five per cent. Purified alcohol.

Al'cohol dilu'tum. Diluted alcohol. Equal parts of alcohol and water.

Al'lium. Garlic. The bulb of the plant. Expectorant. Used as a syrup.

Al'oe barbaden'sis. Barbadoes aloes. The dried juice from the leaves of the true plant. Cathartic. Dose, ½ to 10 grs., or 0.033 to 0.650 gm.

Al'oe purifica'ta. Purified aloes. Aloes freed from all impurities. Cathartic. Dose, ½ to 10 grs., or 0.033 to 0.650 gm.

Al'oe socotri'na. Socotrine aloes. The dried juice from the leaf of another variety. Cathartic. Dose, ½ to 10 grs. or 0.033 to 0.650 gm.

Aloi'num. Aloin. Abstracted from aloes. Cathartic. Dose, ¼ to 2 grs., or 0.016 to 0.130 gm.*

Al'thea. Marshmallow. The root. Demulcent. Used as a syrup.

Alu'men. Alum. Potash alum. From aluminum and potassium with sulphuric acid. Astringent. Dose, 10 to 60 grs., or 0.650 to 4.0 gm.

Alu'men exsicca'tum. Dried alum.
Alu'men us'tum. Burned alum. } Both the same.
Astringent. Dose, 10 to 60 grs., or 0.65 to 4.0 gm.

Alu'mini hy'dras. Aluminum hydrate. By decomposition of alum.

Alu'mini sul'phas. Aluminum sulphate. From aluminum by sulphuric acid. Astringent wash.

Ammoni'acum. Ammoniac. A gum-resin from a plant. Stimulant; expectorant. Used in mixtures.

Ammo'nii ben'zoas. Ammonium benzoate. From ammonia by benzoic acid. Stimulant. Dose, 10 grs., or 0.65 gm.

Ammo'nii bro'midum. Ammonium bromid. From ammonia by hydrobromic acid. Hypnotic. Dose, 10 to 60 grs., or 0.65 to 4.0 gm.

Ammo'nii car'bonas. Ammonium carbonate. From ammonia by fresh carbonic acid.† Stimulant. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Ammo'nii chlori'dum. Ammonium chlorid. From ammonia by hydrochloric acid. Stimulant; expectorant. Dose, 2 to 15 grs., or 0.130 to 1.0 gm.

Ammo'nii io'didum. Ammonium iodid. From ammonia by iodin. Alterative. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

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*It is well that the nurse be shown sets of these weights. They are useful object-lessons.

†These processes are not by any means as simple as they appear by these statements. Nevertheless, they are useful and may be enlarged upon if the instructor so desires.

Ammo'nii ni'tras. Ammonium nitrate. From ammonia by nitric acid. Stimulant. Dose, 5 to 15 grs., or 0.325 to 1.0 gm.

Ammo'nii salicyl'as. Ammonium salicylate. From ammonia by the action of salicylic acid. Antiseptic; antirheumatic. Dose, 0.250 gm., or 4 grs.

Ammo'nii vale'rianas. Ammonium valerianate. From ammonia by valerianic acid. Sedative. Dose, 1 to 5 grs., or 0.065 to 0.325 gm.

Amyg'dala ama'ra. Bitter almond. The seed. Used in form of syrup as a vehicle.

Amyg'dala dul'cis. Sweet almond. The seed. Used in mixtures for a vehicle.

A'myl ni'tris. Amyl nitrite. From amylic alcohol by nitrous acid. Stimulant. By inhalation, 2 to 5 drops.

Am'ylum. Starch. From corn or other grains. Externally as an absorbent.

Ani'sum. Anise. The fruit. Carminative. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

An'themis. Chamomile. The flower heads. Tonic. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Antimo'nii et potas'sii tar'tras. Antimony and potassium tartrate. Tartar emetic. From antimony and potassium by tartaric acid. Expectorant; emetic. Dose, $\frac{1}{8}$ to 5 grs., or 0.008 to 0.325 gm.

Antimo'nii ox'idum. Antimony oxid. From antimony chlorid by ammonia. Alterative. Dose, 1 to 3 grs., or 0.065 to 0.195 gm.

Antimo'nii sul'phidum. Antimony sulphid. Occurs native.

Antimo'nii sul'phidum purifica'tum. Purified antimony sulphid.

Antimo'nium sulphura'tum. Sulphurated antimony. Kermes mineral. Alterative. Dose, 1 to 3 grs., or 0.065 to 0.195 gm.

Antipyri'na. Antipyrine. A synthetic product. Antipyretic, antirheumatic and antineuralgic. Dose, 0.250 gm., or 4 grs.

Apoc'ynum. Canadian hemp. The root. Diaphoretic. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Apomorphi'næ hydrochlo'ras. Apomorphine hydrochlorate. From morphine by hydrochloric acid. Emetic. Dose, $\frac{1}{10}$ gr., or 0.006 gm.

A'qua. Water. Natural water in its purest attainable state.

A'qua ammo'niæ. Ammonia water. A solution of ammonia gas. Ten per cent.

A'qua ammo'niæ for'tior. Stronger water of ammonia. Twenty-eight per cent.

A'qua amyg'dalæ ama'ræ. Bitter almond water. Made from the oil. Vehicle for other medicines.

A'qua ani'si. Anise water. Made from the oil. Carminative *ad lib.* and as a vehicle.

A'qua auran'tii flo'rum. Orange-flower water. Equal parts of the strong water and distilled water. For flavoring purposes.

A'qua auran'tii flo'rum for'tior. Strong orange-flower water. Distilled from the flowers.

A'qua cam'phoræ. Camphor water. From the gum. Sedative. Dose, f ʒss to f ʒij, or 2.0 to 8.0 c.c.

A'qua chlo'ri. Chlorine water. From hydrochloric acid. Antiseptic wash.

A'qua chlorofor'mi. Chloroform water. Chloroform dissolved in water. Stimulant. Dose, f ʒj to f ʒiv, or 4.0 to 16.0 c.c.

A'qua cinnamo'mi. Cinnamon water. From the oil. Carminative. Dose, f ʒss to f ʒij, or 2.0 to 8.0 c.c.

A'qua creoso'ti. Creosote water. From creosote. Used in nausea mixtures. Dose, f ʒ to f ʒij, or 4.0 to 8.0 c.c.

A'qua destilla'ta. Distilled water.

A'qua fœnic'uli. Fennel water. From the oil. Carminative. Dose, f ʒss to f ʒij, or 2.0 to 8.0 c.c.

A'qua hamamel'idis. Hamamelis water or so-called extract of witch hazel. Obtained by distilling the leaves with water. External use.

A'qua hydrogen'ii diox'idi. Solution of hydrogen dioxid. This should be permanent and neutral.

A'qua men'thæ piperi'tæ. Peppermint water. From the oil. Carminative. Dose, f ʒss to f ʒij, or 2.0 to 8.0 c.c.

A'qua men'thæ vir'idis. Spearmint water. From the oil. Carminative. Dose, f ʒss to f ʒij, or 2.0 to 8.0 c.c.

A'qua ro'sæ. Rose water. Equal parts of the strong rose water and distilled water. For flavor.

A'qua ro'sæ for'tior. Strong rose water. Distilled from the flowers.

Argen'ti cyan'idum. Silver cyanid. From silver by hydrocyanic acid. Sedative. Dose, $\frac{1}{60}$ to $\frac{1}{20}$ gr., or 0.001 to 0.003 gm.

Argen'ti iod'idum. Silver iodid. From silver by iodin. Alterative. Dose, ½ to 2 grs., or 0.033 to 0.130 gm.

Argen'ti ni'tras. Silver nitrate. From silver by nitric acid. Astringent. Dose, ⅛ to ½ gr., or 0.008 to 0.033 gm.

Argen'ti ni'tras dilu'tus. Diluted silver nitrate. Mitigated caustic. Escharotic.

Argen'ti ni'tras fu'sus. Fused silver nitrate. Molded silver nitrate. Lunar caustic. Caustic silver. Escharotic.

Argen'ti ox'idum. Silver oxid. Decomposition of the nitrate. Tonic. Dose, ½ to 2 grs., or 0.033 to 0.130 gm.

Ar'nicæ flo'res. Arnica flowers.

Ar'nicæ ra'dix. Arnica root. The flowers and root of the same plant. Externally for bruises, etc.

Ar'seni iod'idum. Arsenic iodid. From arsenic by iodin. Alterative. Dose, $\frac{1}{20}$ to ⅛ gr., or 0.003 to 0.008 gm.

Ascle'pias. Pleurisy root. Diaphoretic. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Aspid'ium. Male fern. The root. Teniacide. The oil is used.

Aspidosper'ma. Quebracho. The bark. Antiperiodic. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Asafœ'tida. Asafetida. A gum resin. Sedative. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Atropi'na. Atropine. Alkaloid from belladonna. Narcotic. Dose, $\frac{1}{64}$ gr., or 0.001 gm.

Atropi'næ sul'phas. Atropia sulphate. From belladonna. Narcotic. Dose, $\frac{1}{100}$ to $\frac{1}{60}$ gr., or 0.0006* to 0.001 gm.

Auran'tii ama'ri cor'tex. Bitter orange peel. Used as tincture for flavor.

Auran'tii dul'cis cor'tex. Sweet orange peel. Used as tincture for flavor.

Au'rii et so'dii chlo'ridum. Gold and sodium chlorid. Alterative. Dose, $\frac{1}{16}$ to $\frac{1}{8}$ gr., or 0.004 to 0.008 gm.

B.

Balsa'mum peruvia'num. Balsam of Peru. From a South American tree. Externally.

Balsa'mum toluta'num. Balsam of Tolu. From the tree. Used as an expectorant in the form of syrup.

Ba'rii diox'idum. Barium dioxide. For preparing hydrogen dioxide.

Belladon'næ fo'lia. Belladonna leaves. }
Belladon'næ ra'dix. Belladonna root. } From the same plant.
Narcotic. Dose, 1 to 3 grs., or 0.065 to 0.195 gm.

Benzaldehyd'um. Benzaldehyde. Produced synthetically or obtained from bitter oil of almond. Dose, 0.030 c.c., or ½ ♏.

Benzi'num. Benzin. Distilled from petroleum.

Benzoi'num. Benzoin. A gum resin. Stimulant; expectorant. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Benzosulphinid'um. Benzosulphinide. Saccharin. Synthetic product. Used as a sweetening agent.

Berbe'ris. Berberis. The root. Tonic and alterative. Dose, 0.325 to 2 gm., or 5 to 30 gr.

Bismu'thi ci'tras. Bismuth citrate. From bismuth nitrate and citric acid. Astringent. Dose, 5 to 10 grs., or 0.325 to 0.65 gm.

Bismu'thi et ammo'nii ci'tras. Bismuth and ammonium citrate. Astringent. Dose, 5 to 10 grs., or 0.325 to 0.65 gm.

Bismu'thi subcar'bonas. Bismuth subcarbonate. From bismuth nitrate and ammonia. Astringent. Dose, 5 to 10 grs., or 0.325 to 0.650 gm.

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*Fractional parts of milligrams are read decimally, and this reads as six-tenths of a milligram, the decimal point being understood.

Bismu'thi subgal'las. Bismuth subgallate. From bismuth carbonate and gallic acid. Absorbent. Astringent. Dose, 0.250 gm., or 4 grs.

Bismu'thi subni'tras. Bismuth subnitrate. From bismuth and nitric acid.

Bismu'thi subsalicyl'as. Bismuth subsalicylate. From bismuth carbonate and salicylic acid. Intestinal antiseptic, astringent, sedative. Dose, 0.250 gm., or 4 grs.

Bromofor'mum. Bromoform. Derivative of alcohol by hydrobromic acid or bromine. Antiseptic and sedative. Dose, 0.200 c.c., or 3 ♏.

Bro'mum. Bromin. From mineral spring waters.

Bryo'nia. Bryony. The root. Cathartic. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Bu'chu. Buchu. The leaves. Diuretic. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

C.

Caffei'na. Caffeine. Alkaloid from tea and coffee. The citrate is used.

Caffei'na citra'ta. Citrated caffeine. From the alkaloid by citric acid. Stimulant. Dose, 2 to 5 grs., or 0.130 to 0.325 gm.

Caffei'na citra'ta efferves'cens. Effervescing citrated caffeine. Prepared to effervesce when mixed with water. Stimulant. Dose, ½ to 2 ʒ or 2 to 8 c.c.

Cal'amus. Sweet flag or flag root. The root. Stimulant. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Cal'cii bromi'dum. Calcium bromid. From lime by hydrobromic acid. Sedative. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Cal'cii car'bonas præcipita'tus. Precipitated calcium carbonate. Chalk. Used in tooth powders.

Cal'cii chlori'dum. Calcium chloride. From lime and hydrochloric acid. Alterative. Dose, 5 to 20 grs., or 0.325 to 1.3 gm.

Cal'cii hypophos'phis. Calcium hypophosphite. From lime and phosphorus. In phthisis. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Cal'cii phos'phas præcipita'tus. Precipitated calcium phosphate. Bone ashes, purified. Used for filtering purposes.

Cal'cii sul'phas exsicca'tus. Plaster-of-Paris. Dried calcium sulphate. Occurs as gypsum. Used for surgical purposes.

Calendu'la. Marigold. The flowers. Alterative. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Calum'ba. Calumba. The root. Tonic. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Calx. Lime. Calcium oxid. Burned limestone. Used in the form of lime-water.

Calx chlora'ta. Chlorinated lime. Dry slaked lime and chlorin gas. Disinfectant. Should be kept in air-tight packages.

Calx sulphura'ta. Sulphurated lime. From calcium sulphate by hot charcoal. Alterative. Dose, $\frac{1}{10}$ to 1 gr., or 0.006 to 0.065 gm.

Cambo'gia. Gamboge. A gum resin. Cathartic. Dose, 1 to 5 grs., or 0.065 to 0.325 gm.

Cam'phora. Camphor. A gum, *so called*. Sedative. Dose, $\frac{1}{2}$ to 5 grs., or 0.033 to 0.325 gm.

Cam'phora monobroma'ta. Monobromated camphor. From camphor by bromin. Sedative. Dose, 1 to 5 grs., or 0.065 to 0.325 gm.

Can'nabis in'dica. Indian hemp. The flowers. Narcotic. Dose, 1 to 3 grs., or 0.065 to 0.195 gm.

Can'tharis. Cantharides. Spanish flies. The whole insect. Vesicant. Externally.

Cap'sicum. Cayenne or African pepper. The fruit. Stimulant. Dose, 1 to 3 grs., or 0.065 to 0.195 gm.

Car'bo anima'lis. Animal charcoal. By charring bones.

Car'bo lig'ni. Wood charcoal. By charring wood. Used in poultices as an absorbent. Carminative by absorption of gas. Dose, 1 to 3 grs., or 0.065 to 0.195 gm.

Cardamo'mum. Cardamom. The seeds. Carminative. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Ca'rum. Caraway. The seed. Carminative. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Caryophyl'lus. Clove. The dried, unopened flowers. Carminative. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Cascaril'la. Cascarilla. The bark. Aromatic tonic. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Cas'sia fis'tula. Purging cassia. The fruit. Cathartic. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Casta'nea. Chestnut. The leaves. Antispasmodic. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Cataplas'ma kaoli'ni. Cataplasm of kaoline. A paste made with kaoline, boric acid, thymol, methyl salicylate, oil of peppermint and glycerin. Designed to be used as a poultice by external application.

Cat'echu. Catechu. An extract from the wood. Astringent. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Caulophyl'lum. Blue cohosh. The root. Antispasmodic. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Ce'ra alba. White wax. Bleached honey-comb. Used in making ointments.

Ce'ra fla'va. Yellow wax. Honey-comb. Used in making ointments.

Cera'tum. Cerate. White wax and lard.

Cera'tum cam'phoræ. Camphor cerate.

Cera'tum cantha'ridis. Cantharides cerate.

Cera'tum ceta'cei. Spermaceti cerate.

Cera'tum plum'bi subaceta'tis. Cerate of lead subacetate.

Cera'tum resi'næ. Resin cerate. Basilicon ointment.

Cera'tum resi'næ compos'itum. Compound resin cerate. Resin, yellow wax, suet, turpentine and linseed oil.

Ce'rii ox'alas. Cerium oxalate. Used in vomiting. Dose, 1 gr.

Ceta'ceum. Spermaceti. A deposit in the head of the sperm whale.

Cetra'ria. Iceland moss. Demulcent. Used in decoction.

Char'ta potas'sii nitra'tis. Nitrate of potash paper. Inhaled by burning. It is antispasmodic.

Char'ta sina'pis. Mustard paper. Mustard leaves. Vesicant.

Chelido'nium. Celandine. The entire plant. Cathartic. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Chenopo'dium. American wormseed. The seed. Anthelmintic. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Chimaphi'la. Pipsissewa. The leaves. Diuretic. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Chira'ta. Chirata. The whole plant. Tonic. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Chlo'ral. Chloral hydrate. From alcohol by chlorin. Sedative. Dose, 1 to 30 grs., or 0.065 to 2.0 gm.

Chloralformami'dum Chlora'lamide. (Trade name). Chloralformamide, Hypnotic. Dose, 1 gm., or 15 grs.

Chlorofor'mum. Chloroform. From alcohol by chlorin and slaked lime. Anesthetic by inhalation. Stimulant. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c.

Chon'drus. Irish moss. Carragheen. Sea moss. The whole plant. Demulcent. Used in decoction.

Chrysarobi'num. Chrysarobin. From an East Indian drug commercially known as goa powder. Irritant cathartic. Dose, 0.030 gm., or ½ gr.

Cimicif'uga. Black snakeroot. The root. Antispasmodic. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Cincho'na. Cinchona. Peruvian bark. The bark. Antipyretic; tonic. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Cincho'na ru'bra. Red cinchona. The bark. Antipyretic. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Cinchonidi'næ sul'phas. Cinchonidine sulphate. Alkaloid of cinchona. Antipyretic. Dose, 1 to 10 grs., or 0.065 to 0.650 gm.

Cinchoni'na. Cinchonine. Alkaloid from cinchona. Antipyretic. Dose, 1 to 10 grs., or 0.065 to 0.650 gm.

Cinchoni'næ sul'phas. Cinchonine sulphate. Alkaloid of cinchona. Antipyretic. Dose, 1 to 10 grs., or 0.065 to 0.650 gm.

Cinnamo'mum cas'sia. Cassia cinnamon. The bark. Stimulant. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Cinnamo'mum saigon'icum. Saigon cinnamon.

Cinnamo'mum zeylan'icum. Ceylon cinnamon.

Co'ca. Erythroxylon. The leaves. Stimulant. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Cocai'na. Cocaine. The alkaloid from coca leaves. Local anesthetic and stimulant. Dose, 0.030 gm., or ½ gr.

Cocai'næ hydrochlo'ras. Cocaine hydrochlorate. Local anesthetic; stimulant. Dose, ⅛ to ½ gr., or 0.008 to 0.033 gm.

Coc'cus. Cochineal. The female insect. Anodyne. Dose, ½ to 2 grs., or 0.033 to 0.130 gm.

Codei'na. Codeine. Alkaloid of opium. Anodyne. Dose, ½ to 2 grs., or 0.033 to 0.130 gm.

Codei'na phos'phas. Codeine phosphate. **Codei'næ sul'phas.** Codeine sulphate. Salts of an alkaloid obtained from morphine. Analgesic, sedative. Dose, 0.030 gm., or ½ gr.

Col'chici ra'dix. Colchicum root. **Col'chici se'men.** Colchicum seed. Alterative; anti-rheumatic. Dose, 1 to 3 grs., or 0.065 to 0.195 gm.

Colchici'na. Colchicine. An alkaloid obtained from colchicum. Alterative. Antirheumatic. Dose, 0.0005 gm., or $\frac{1}{111}$ gr.

Collo'dium. Collodion. External use.

Collo'dium cantharida'tum. Cantharidal collodion. Externally; vesicant.

Collo'dium flex'ile. Flexible collodion. External use.

Collo'dium styp'ticum. Styptic collodion. Externally; styptic.

Colocyn'this. Colocynth; bitter apple. The fruit. Cathartic. Dose, 1 to 3 grs., or 0.065 to 0.195 gm.

Confec'tio ro'sæ. Confection of rose. Vehicle.

Confec'tio sen'næ. Confection of senna. Cathartic. Dose, ℥j to ℥iv, or 4.0 to 16.0 gm.

Coni'um. Hemlock. The fruit. Narcotic. Dose, 1 to 3 grs., or 0.065 to 0.195 gm.

Convalla'ria. Convallaria. The root. Sedative. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Copai'ba. Balsam of copaiba. The oleoresin from the plant. Urethral stimulant. Dose, f ℥ ½ to f ℥j, or 1.0 to 4.0 c.c.

Corian'drum. Coriander. The seed. Carminative. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Creoso'tum. Creosote. Distilled from beech-wood tar. Antiseptic. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c.

Cre'ta præpara'ta. Prepared chalk. Native chalk freed from lumps. Ant-acid. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Cre'sol. Cresol. Obtained from coal tar. Disinfectant. Antiseptic. Dose, 0.065 c.c., or 1 ♏.

Cro'cus. Spanish saffron. A portion of the flower. Emmenagogue. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Cube'ba. Cubeb. The berry. Stimulant. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Cu'pri sul'phas. Copper sulphate. Blue vitriol. From copper by action of sulphuric acid. Escharotic. External use.

Cus'so. Kousso. Brayera. The flowers. Anthelmintic. Dose, 2 to 4 drams, or 8 to 16 gm.

Cypripe'dium. Ladies' slipper. The root. Antispasmodic. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

D.

Decoc'tum cetra'riæ. Decoction of cetraria. Demulcent. Dose, *ad lib.*

Decoc'tum sarsaparil'læ compos'itum. Compound decoction of sarsaparilla. Alterative. Dose, f ℥j to f ℥iv, or 30 to 120 c.c.

Digita'lis. Digitalis. Foxglove. The leaves. Heart stimulant. Dose, ½ to 2 grs., or 0.033 to 0.130 gm.

Dulcama'ra. Bitter-sweet. The twigs. Diuretic; diaphoretic. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

E.

Elas'tica. Caoutchouc. India rubber. Used in preparing plasters.

Elateri'num. Elaterin. Active principle of the squirting cucumber. Cathartic. Dose, $\frac{1}{40}$ to $\frac{1}{10}$ gr., or 0.001 to 0.006 gm.

Elix'ir ad'juvans. Adjuvant elixir. An aromatic elixir for disguising the taste of quinine.

Elix'ir aromat'icum. Aromatic elixir. Used as a vehicle for other medicines. It is flavored with orange, lemon, anise, and coriander.

Elix'ir fer'ri, quini'næ et strychni'næ phospha'tum. Elixir of phosphates of iron, quinine and strychnine (elixir 3 phosphates); f ℥i contains about $\frac{1}{60}$ gr. of strychnine.

Elix'ir phos'phori. Elixir of phosphorus. One fluidram equals $\frac{1}{60}$ gr. of phosphorus. Nerve tonic. Dose, f ℥j, or 4 c.c.

Emplas'trum adhæ'sivum. Adhesive plaster. Composed of rubber, petrolatum and lead plaster.

Emplas'trum ammoni'aci cum hydrar'gyro.* Plaster of ammoniacum and mercury. Stimulant.

Emplas'trum ar'nicæ. Arnica plaster. Stimulant.

Emplas'trum belladon'næ. Belladonna plaster. Anodyne.

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*This being a full and complete official list, *all* the preparations are given, whether of frequent or infrequent use, and will be found very useful for reference.

Emplas'trum cap'sici. Capsicum plaster.* Stimulant.

Emplas'trum fer'ri. Iron plaster. Strengthening plaster. Stimulant.

Emplas'trum hydrar'gyri. Mercurial plaster. Alterative.

Emplas'trum ichthyocol'læ. Isinglass plaster. Court plaster.

Emplas'trum o'pii. Opium plaster. Anodyne.

Emplas'trum pi'cis burgun'dicæ. Burgundy pitch plaster. Stimulant.

Emplas'trum pi'cis cantharida'tum. Cantharidal or warming plaster. Rubefacient.

Emplas'trum plum'bi. Lead plaster. Diachylon plaster. Vehicle for other plasters.

Emplas'trum resi'næ. Resin plaster. Adhesive plaster. Stimulating.

Emplas'trum sapo'nis. Soap plaster. Stimulating.

Emul'sum ammoni'aci. Emulsion of ammoniacum. Expectorant. Dose, one to two tablespoonfuls, or 15 to 30 c.c.

Emul'sum amyg'dalæ. Emulsion of almond. Vehicle for other medicines.

Emul'sum asafœ'tidæ. Emulsion of asafetida. Sedative. Dose, f ʒiv to f ʒj, or 15 to 30 c.c.

Emul'sum chlorofor'mi. Chloroform emulsion. Sedative. Dose, f ʒiv to f ʒj, or 15 to 30 c.c. One fluidram contains 2½ minims, or 10 drops of chloroform.

Emul'sum o'lei mor'rhuæ. Emulsion of cod-liver oil. Contains 50 per cent. cod-liver oil. Dose, 8 c.c., or f ʒij.

Emul'sum o'lei mor'rhuæ cum hypophosphi'tibus. Emulsion of cod-liver oil with hypophosphites. Dose, 8 c.c., or f ʒij.

Emul'sum o'lei terebin'thinæ. Emulsion of oil of turpentine. Contains 15 per cent. of oil. Dose, 4 c.c., or f ʒj.

Ergo'ta. Ergot. A fungous growth upon rye. Oxytocic. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Eriodic'tyon. Yerba santa. The leaves. Tonic, expectorant. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Eucalyp'tol. Eucalyptol. Obtained from the oil of eucalyptus. Expectorant. Dose, 5 to 30 ♏, or 0.325 to 2.0 c.c.

Eucaly'ptus. Eucalyptus. The leaves. Antipyretic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Eu'genol. An aromatic principle obtained from oil of clove. Flavor and carminative. Dose 0.200 c.c., or 3 ♏.

Euon'ymus. Wahoo. The bark. Alterative. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

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*Here is an official plaster much used. Officially and homemade they are spread upon kid. As usually seen, they are mixed with rubber, spread upon muslin, and sometimes made porous. These are all spread by machinery and are preferable to the hand-spread plaster, being neater.

Eupato'rium. Eupatorium. Thoroughwort or boneset. Expectorant. Dose, 5 to 30 grs., or 0.325 to 2.0 gm.

Extrac'tum aconi'ti. Extract of aconite. From the root. Sedative. Dose, $\frac{1}{10}$ to $\frac{1}{4}$ gr., or 0.006 to 0.016 gm.

Extrac'tum aconi'ti flu'idum. Fluid extract of aconite. From the root. Sedative. Dose, $\frac{1}{2}$ to 2 ♏, or 0.030 to 0.130 c.c.

Extrac'tum al'oes. Extract of aloes. From the dried juice of the leaves. Cathartic. Dose, 1 to 10 grs., or 0.065 to 0.650 gm.

Extrac'tum apoc'yni flu'idum. Fluid extract of apocynum. From the root. Diaphoretic. Dose, 5 to 30 ♏, or 0.325 to 2.0 c.c.*

Extrac'tum ar'nicæ ra'dicis. Extract of arnica root. Alterative. Dose, 2 to 5 grs., or 0.130 to 0.325 gm.

Extrac'tum ar'nicæ ra'dicis flu'idum.† Fluid extract of arnica root. Alterative. Dose, 5 to 30 ♏, or 0.325 to 2.0 c.c.

Extrac'tum aromat'icum flu'idum. Fluid extract of aromatic powder. Carminative. Dose, 5 to 30 ♏, or 0.325 to 2.0 c.c.

Extrac'tum asclepia'dis flu'idum. Fluid extract of asclepias. Diaphoretic. Dose, 5 to 30 ♏, or 0.325 to 2.0 c.c.

Extrac'tum aspidosper'matis flu'idum. Fluid extract of aspidium. From the bark. Antiperiodic. Dose, 5 to 30 ♏, or 0.325 to 2.0 c.c.

Extrac'tum auran'tii ama'ri flu'idum. Fluid extract of bitter orange peel. Stimulant. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum belladon'næ folio'rum alcohol'icum. Alcoholic extract of belladonna leaves. Narcotic. Dose, $\frac{1}{8}$ to $\frac{1}{4}$ gr., or 0.008 to 0.016 gm.

Extrac'tum belladon'næ ra'dicis flu'idum. Fluid extract of belladonna root Narcotic. Dose, 1 to 3 ♏, or 0.065 to 0.195 c.c.

Extrac'tum bu'chu flu'idum. Fluid extract of buchu. From the leaves. Diuretic. Dose, 5 to 30 ♏, or 0.325 to 2.0 c.c.‡

Extrac'tum cal'ami flu'idum. Fluid extract of calamus. From the root. Carminative. Dose, 5 to 30 ♏, or 0.325 to 2.0 c.c.

Extrac'tum calum'bæ flu'idum. Fluid extract of calumba. From the root. Bitter tonic. Dose, 5 to 30 ♏, or 0.325 to 2.0 c.c.

Extrac'tum can'nabis in'dicæ. Extract of Indian cannabis. From the root. Narcotic. Dose, $\frac{1}{3}$ to 1 gr., or 0.020 to 0.065 gm.

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*Let the nurse observe that the dose in minims of a fluid extract is the same as the number of grains of the drug. See Dose Table.

†What has just been noted regarding the similarity of dose of *fluid* extracts and the drug may *not* be said of solid extracts, the strength of which are never alike. (See article: Extracts.)

‡Notice that although the doses are very similar yet they are repeated in both systems every time. This is to familiarize the nurse with this important feature.

Extrac'tum can'nabis in'dicæ flu'idum. Fluid extract of Indian cannabis. From the root. Narcotic. Dose, 1 to 3 ♏, or 0.065 to 0.195 c.c.*

Extrac'tum cap'sici flu'idum. Fluid extract of capsicum. From the fruit (bird peppers). Stimulant. Dose, 1 to 3 grs., or 0.065 to 0.195 gm.

Extrac'tum casta'neæ flu'idum. Fluid extract of castanea. From the leaves. Expectorant. Dose, 5 to 30 ♏, or 0.325 to 2.0 c.c.

Extrac'tum chimaph'ilæ flu'idum. Fluid extract of pipsissewa. The leaves. Diuretic. Dose, 5 to 30 ♏, or 0.325 to 2.0 c.c.

Extrac'tum chira'tæ flu'idum. Fluid extract of chirata. The entire plant. Bitter tonic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum cimicif'ugæ. Extract of black snakeroot. Alterative in asthma. Dose, 3 to 5 gr., or 0.195 to 0.325 gm.

Extrac'tum cimicif'ugæ flu'idum. Fluid extract of black snakeroot. Alterative. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum cincho'næ. Extract of Peruvian bark. Tonic. Dose, 1 to 5 grs., or 0.065 to 0.325 gm.

Extrac'tum cincho'næ flu'idum. Fluid extract of cinchona. Tonic. Dose, 5 to 30 grs., or 0.325 to 2 c.c.

Extrac'tum co'cæ flu'idum. Fluid extract of coca. From the leaves. Stimulant. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum col'chici ra'dicis. Extract of colchicum root. Alterative. Dose, ¼ to ¾ grs., or 0.016 to 0.048 gm.

Extrac'tum col'chici ra'dicis flu'idum. Fluid extract of colchicum root. Alterative. Dose, 1 to 3 ♏, or 0.065 to 0.195 c.c.

Extrac'tum col'chici sem'inis flu'idum. Fluid extract of colchicum seed. Alterative. Dose, 1 to 3 ♏, or 0.065 to 0.195 c.c.

Extrac'tum colocyn'thidis. Extract of colocynth. From the fruit. Cathartic. Dose, ½ to 2 grs. or 0.033 to 0.13 gm.

Extrac'tum colocyn'thidis compos'itum. Compound extract of colocynth. Cathartic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Extrac'tum coni'i. Extract of conium. Narcotic. Dose, ¼ to ¾ gr., or 0.016 to 0.048 gm.

Extrac'tum coni'i flu'idum. Fluid extract of conium. From the fruit. Narcotic. Dose, 1 to 3 ♏, or 0.065 to 0.195 c.c.

Extrac'tum convalla'riæ flu'idum. Fluid extract of convallaria. From the root. Cardiac sedative. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum cube'bæ flu'idum. Fluid extract of cubeb. From the berries. Stimulant; expectorant. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum cus'so flu'idum. Fluid extract of cusso. From the flowers. Anthelmintic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

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*The nurse should practise reading these figures aloud. The dose of extract of cannabis indica is from twenty to sixty-five milligrams; of the fluid extract from sixty-five to one hundred and ninety-five thousandths of a cubic centimeter.

Extrac'tum cypripe'dii flu'idum. Fluid extract of cypripedium. From the root. Antispasmodic. Dose, 5 ♏ to f ℥ss, or 0.325 to 2 c.c.

Extrac'tum digita'lis. Extract of digitalis. From the leaves. Cardiac stimulant. Dose, ¼ to 1 gr., or 0.008 to 0.065 gm.

Extrac'tum digita'lis flu'idum. Fluid extract of digitalis. Cardiac stimulant. Dose, ½ to 2 ♏, or 0.033 to 0.13 c.c.

Extrac'tum dulcama'ræ flu'idum. Fluid extract of bittersweet twigs. Alterative. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum ergo'tæ. Extract of ergot. From the rye fungus. Oxytocic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Extrac'tum ergo'tæ flu'idum. Fluid extract of ergot. Oxytocic. Dose, 5♏ to f ℥j, or 0.325 to 4 c.c.

Extrac'tum eriodic'tyi flu'idum. Fluid extract of yerba santa. From the leaves. Tonic expectorant.* Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum eucalyp'ti flu'idum. Fluid extract of eucalyptus. From the leaves. Febrifuge. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum euon'ymi. Extract of wahoo. From the bark. Laxative. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Extrac'tum eupato'rii flu'idum. Fluid extract of boneset. From the leaves. Expectorant. Dose, 5 to 30 ♏, or 0.325 to 2 gm.

Extrac'tum fran'gulæ flu'idum. Fluid extract of buckthorn. From the bark. Cathartic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum gelsem'ii flu'idum. Fluid extract of yellow jasmine. From the root. Antispasmodic. Dose, 1 to 3 ♏, or 0.065 to 0.195 c.c.

Extrac'tum gentia'næ. Extract of gentian. From the root. Tonic. Dose, 5 to 10 grs., or 0.325 to 0.65 gm.

Extrac'tum gentia'næ flu'idum. Fluid extract of gentian. Tonic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum gera'nii flu'idum. Fluid extract of geranium. From the root. Astringent. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum glycyrrhi'zæ. Extract of licorice. Expectorant. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Extrac'tum glycyrrhi'zæ flu'idum. Fluid extract of licorice. Expectorant. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum glycyrrhi'zæ pu'rum.† Pure extract of licorice. Expectorant. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Extrac'tum gossyp'ii ra'dicis flu'idum. Fluid extract of cotton root. Emmenagogue. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

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*These terms are not always complete. For instance, yerba santa is tonic with an *especially* tonic action on the pectoral muscles, and, therefore, a tonic expectorant.

†This pure extract and the extract are the forms which come in cylindrical sticks and known as "black" licorice.

Extrac'tum grinde'liæ flu'idum. Fluid extract of grindelia. From the leaves. Antispasmodic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum guara'næ flu'idum. Fluid extract of guarana. Stimulant. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum hæmatox'yli. Extract of logwood. From the wood. Astringent. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Extrac'tum hamamel'idis flu'idum.* Fluid extract of witch hazel. From the leaves. Hemostatic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum hydras'tis flu'idum. Fluid extract of golden seal. From the root. Alterative. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum hyoscy'ami. Extract of henbane. From the leaves. Anodyne. Dose, ¼ to ⅜ gr., or 0.016 to 0.048 gm.

Extrac'tum hyoscy'ami flu'idum. Fluid extract of henbane. Anodyne. Dose, 1 to 3 ♏, or 0.065 to 0.195 c.c.

Extrac'tum ipecacuan'hæ flu'idum. Fluid extract of ipecac. From the root. Emetic; diaphoretic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum iri'dis. Extract of blue flag. From the root. Stimulant; carminative. Dose, 1 to 10 ♏, or 0.065 to 0.650 gm.

Extrac'tum iri'dis flu'idum. Fluid extract of blue flag. Carminative. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum jala'pæ. Extract of jalap. From the root. Cathartic. Dose, 1 to 5 grs., or 0.065 to 0.325 gm.

Extrac'tum juglan'dis. Extract of butternut bark. Laxative. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Extrac'tum krame'riæ flu'idum. Fluid extract of krameria. Root. Astringent. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum lap'pæ flu'idum. Fluid extract of lappa. From the root. Alterative. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum leptan'dræ. Extract of leptandra. From the root. Cathartic. Dose, 1 to 5 grs., or 0.065 to 0.325 gm.

Extrac'tum leptan'dræ flu'idum. Fluid extract of leptandra. Cathartic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum lobe'liæ flu'idum. Fluid extract of lobelia. From the leaves. Antispasmodic; emetic. Dose, 1 to 3 ♏, or 0.065 to 0.195 c.c.

Extrac'tum lupuli'ni flu'idum. Fluid extract of lupulin. From the powder. Hypnotic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum mal'ti. Extract of malt. A thick extract obtained from malted grain. Tonic, nutrient. Dose, 16 c.c., or f ℥iv.

Extrac'tum mat'ico flu'idum. Fluid extract of matico leaves. Stimulant; urinary. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum menisper'mi flu'idum. Fluid extract of menispermum. From the root. Alterative. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

*This should not be confounded with the *distilled* fluid extract from the twigs, of which Pond's extract is the type.

Extrac'tum meze'rei flu'idum. Fluid extract of mezereum. From the bark. Vesicant; stimulant. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum nu'cis vom'icæ. Extract of nux vomica. From the seeds. Tonic. Dose, ¼ to 1 gr., or 0.016 to 0.065 gm.

Extrac'tum nu'cis vom'icæ flu'idum. Fluid extract of nux vomica. Tonic. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c.

NOTE.—f ℥j of this fluid extract is equal to $\frac{5}{16}$ of *strychnine*.

Extrac'tum o'pii. Extract of opium. Narcotic. Dose, 1 gr., or 0.065 gm.

NOTE.—One grain equals about ⅛ of a grain of morphine.

Extrac'tum parei'ræ flu'idum. Fluid extract of pareira. The root. Diuretic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum physostigma'tis. Extract of Calabar beam. Sedative. Dose, ¼ to ½ gr., or 0.016 to 0.048 gm.

Extrac'tum phytolac'cæ ra'dicis flu'idum. Fluid extract of poke root. Laxative. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum pilocar'pi flu'idum. Fluid extract of pilocarpus. From the leaves. Sialagogue. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum podophyl'li. Extract of podophyllum. From the root. Cathartic. Dose, ¼ to 5 grs., or 0.016 to 0.325 gm.

Extrac'tum podophyl'li flu'idum. Fluid extract of podophyllum. Cathartic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum pru'ni virginia'næ flu'idum. Fluid extract of wild cherry bark. Sedative. Dose, 5 ♏, to ½ teaspoonful, or 0.325 to 2 c.c.

Extrac'tum quas'siæ. Extract of quassia wood. Tonic. Dose, 5 to 10 grs., or 0.325 to 0.65 gm.

Extrac'tum quas'siæ flu'idum. Fluid extract of quassia. Tonic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum rham'ni purshia'næ. Extract of cascara sagrada. Cathartic. Dose, 0.250 gm., or 4 grs.

Extrac'tum rham'ni purshia'næ flu'idum. Fluid extract of cascara bark. Tonic; cathartic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum rhe'i. Extract of rhubarb root. Cathartic; astringent.* Dose, 5 to 30 grs., or 0.325 to 2 gm.

Extrac'tum rhe'i flu'idum. Fluid extract of rhubarb root. Cathartic; astringent. Dose, 5 ♏ to ½ f ℥, or 0.325 to 2 c.c.

Extrac'tum rho'is gla'bræ flu'idum. Fluid extract of sumach berries. Astringent. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum ro'sæ flu'idum. Fluid extract of rose petals. Vehicle for other medicines.

Extrac'tum ru'bi flu'idum. Fluid extract of blackberry bark. Astringent. Dose, 5 ♏ to ½ teaspoonful, or 0.325 to 2 c.c.

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*This seems contradictory; but the fact of its being cathartic *first* and *then* astringent renders it exceptionally valuable among cathartics.

Extrac'tum ru'micis flu'idum. Fluid extract of yellow dock root. Alterative. Dose, 5 ♏ to f ℥ss, or 0.325 to 2 c.c.

Extrac'tum sabi'næ flu'idum. Fluid extract of savine leaves. Uterine stimulant. Dose, 1 to 3 ♏, or 0.065 to 0.195 c.c.

Extrac'tum sanguina'riæ flu'idum. Fluid extract of blood-root. Expectorant. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum sarsaparil'læ flu'idum. Fluid extract of sarsaparilla root. Alterative. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum sarsaparil'læ flu'idum compos'itum. Compound fluid extract of sarsaparilla root. Alterative. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum scil'læ flu'idum. Fluid extract of squill bulbs. Expectorant; emetic. Dose, 1 to 3 ♏, or 0.065 to 0.195 c.c.

Extrac'tum scopa'rii flu'idum. Fluid extract of broom tops. Diuretic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum scopo'læ. Extract of scopola. Narcotic. Anodyne. Mydriatic. Dose, 0.010 gm., or ⅙ gr.

Extrac'tum scutella'riæ flu'idum. Fluid extract of skull-cap, the herb. Alterative. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum sen'egæ flu'idum. Fluid extract of senega root. Expectorant. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum sen'næ flu'idum. Fluid extract of senna leaves. Cathartic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum serpenta'riæ flu'idum. Fluid extract of Virginia snakeroot. Tonic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum spige'liæ flu'idum. Fluid extract of pink root. Anthelmintic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum stillin'giæ flu'idum. Fluid extract of queen's root. Alterative. Dose, 5 ♏ to f ℥ss, or 0.325 to 2 c.c.

Extrac'tum stramo'nii. Extract of stramonium. Anodyne. Antispasmodic. Dose, 0.010 gm., or ⅙ gr.

Extrac'tum stramo'nii sem'inis. Extract of stramonium seed. Narcotic. Dose, ⅛ to ½ gr., or 0.008 to 0.033 gm.

Extrac'tum stramo'nii sem'inis flu'idum. Fluid extract of stramonium seed. Narcotic. Dose, 1 to 3 ♏, or 0.065 to 0.195 c.c.

Extrac'tum sum'bul. Extract of sumbul. Antispasmodic. Nervine. Dose, 0.250 gm., or 4 grs.

Extrac'tum tarax'aci. Extract of dandelion root. Laxative. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Extrac'tum tarax'aci flu'idum. Fluid extract of dandelion. Laxative. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum trit'ici flu'idum. Fluid extract of couch-grass. Diuretic. Dose, 5 ♏ to ½ teaspoonful, or 0.325 to 2 c.c.

Extrac'tum u'væ ur'si. Extract of bearberry leaves. Diuretic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Extrac'tum u'væ ur'si flu'idum. Fluid extract of uva ursi. Diuretic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum valeria'næ flu'idum. Fluid extract of valerian root. Nerve stimulant. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum vera'tri vi'ridis flu'idum. Fluid extract of American hellebore root. Cardiac sedative. Dose, ½ to 2 ♏, or 0.030 to 0.13 c.c.

Extrac'tum vibur'ni op'uli flu'idum. Fluid extract of cramp bark. Stimulant. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum vibur'ni pru'nifo'lii flu'idum. Fluid extract of black haw bark. Uterine stimulant. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum xanthox'yli flu'idum. Fluid extract of prickly ash bark. Stimulant. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Extrac'tum zingib'eris flu'idum. Fluid extract of ginger root. Stimulant. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

F.

Fel bo'vis. Ox-gall.

Fel bo'vis purifica'tum. Purified ox-gall. Laxative. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Fer'ri car'bonas sacchara'tus. Sugared iron carbonate. Hematic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Fer'ri chlo'ridum. Iron chlorid. Used in the form of tincture.

Fer'ri ci'tras. Iron citrate. Hematic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Fer'ri et ammo'nii ci'tras. Iron and ammonium citrate. Hematic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Fer'ri et ammo'nii sul'phas. Iron and ammonium sulphate. Astringent washes.

Fer'ri et ammo'nii tar'tras. Iron and ammonium tartrate. Hematic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Fer'ri et potas'sii tar'tras. Iron and potassium tartrate. Hematic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Fer'ri et quini'næ ci'tras. Iron and quinine citrate. Hematic; antipyretic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Fer'ri et quini'næ ci'tras solu'bilis. Soluble iron and quinine citrate. Hematic; antipyretic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Fer'ri et strychni'næ ci'tras. Iron and strychnine citrate. Tonic; stimulant. Dose, 1 to 5 grs., or 0.065 to 0.325 gm.

NOTE.—This salt contains one per cent. of strychnine citrate, or $\frac{1}{100}$ of a grain in each grain of the salt. Five grains is the maximum dose, and contains $\frac{5}{100}$ or $\frac{1}{20}$ of a grain of strychnine citrate.

The following is an illustration of an unsafe if not poisonous dose. It is given as an illustration also of the necessity of asking the doctor, *when-*

ever there is doubt, for large doses are sometimes given. This is a task which is often unpleasant, but should *always* be fearlessly done:

℞. Sodium bromid, ... ℥j
Iron and strychnine citrate, ... ℥iv
Water,
Syrup of hypophosphites (U. S. P.), āā q. s. ad, f ℥iv.
SIG.—One teaspoonful three times a day, a. c.

Each teaspoonful contains about eight grains of the salt or $\frac{1}{12}$ of a grain of strychnine.

Fer'ri hypophos'phis. Iron hypophosphite. Tonic in lung troubles Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Fer'ri iod'idum sacchara'tum. Sugared iron iodid.* Hematic; alterative. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Fer'ri lac'tas. Iron lactate. Hematic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Fer'ri ox'idum hydra'tum. Hydrated oxid of iron. Antidote in arsenical poisoning. Dose, f ℥iv and more, or 120 c.c.

Fer'ri ox'idum hydra'tum cum magne'sia. Hydrated oxid of iron with magnesia. Arsenical antidote, more quickly prepared than the one first given. Dose, f ℥iv and more, or 120 c.c.

Fer'ri phos'phas solu'bilis. Soluble iron phosphate. Hematic and nerve tonic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Fer'ri pyrophos'phas solu'bilis. Soluble iron pyrophosphate. Hematic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Fer'ri sul'phas. Iron sulphate. Hematic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm. Also in solution as a disinfectant.

Fer'ri sul'phas exsicca'tus. Dried iron sulphate. Hematic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Fer'ri sul'phas granula'tus. Granulated iron sulphate. Hematic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Fer'ri valeria'nas. Iron valerianate. Hematic; nerve stimulant. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Fer'rum. Iron. Hematic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Fer'rum reduc'tum. Reduced iron or iron by hydrogen. Hematic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

NOTE.—This is sometimes called Quevenne's iron, and is the only form of *metallic* iron suitable for internal administration.

Quevenne's iron is made in France and comes in sealed packages, and this sort should be used.

Fi'cus. Fig. Laxative. Used in confections.

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*Sugar is added to iron preparations for its preserving effect. It prevents chemical changes.

Fluidextrac'tum berberi'dis. Fluid extract of berberis. Tonic. Alterative. Dose, 2 c.c., or 30 ♏.

Fluidextrac'tum euon'ymi. Fluid extract euonymus. Dose, 2 c.c., or 30 ♏.

Fluidextrac'tum grana'ti. Fluid extract pomegranate. Dose, 2 c.c.; or 30 ♏.

Fluidextrac'tum lobe'liæ. Fluid extract lobelia. Expectorant. Emetic. Dose, 0.500 c.c., or 8 ♏.

Fluidextrac'tum quer'cus. Fluid extract quercus. Astringent. Dose, 1 c.c., or 15 ♏.

Fluidextrac'tum quilla'jæ. Fluid extract quillaja. Dose, 1 c.c., or 15 ♏.

Fluidextrac'tum rham'ni purshia'næ aromat'icum. Aromatic fluid extract of cascara sagrada. Cathartic. Dose, 1 c.c., or 15 ♏.

Fluidextrac'tum sanguina'riæ. Fluid extract sanguinaria. Expectorant. Emetic. Dose, 0.100 c.c., or 1½ ♏.

Fluidextrac'tum scil'læ. Fluid extract squill. Expectorant. Emetic. Diuretic. Dose, 0.100 c.c., or 1½ ♏.

Fluidextrac'tum scopo'læ. Fluid extract scopola. Narcotic. Anodyne. Mydriatic. Dose, 0.050 c.c., or 1 ♏.

Fluidextrac'tum staphisa'griæ. Fluid extract staphisagria. Alterative. Antiparasitic. Dose, 0.050 c.c., or 1 ♏.

Fluidextrac'tum stramo'nii. Fluid extract stramonium. Anodyne. Antispasmic. Dose, 0.050 c.c., or 1 ♏.

Fluidextrac'tum sum'bul. Fluid extract sumbul. Antispasmodic. Nervine. Dose, 2 c.c., or 30 ♏.

Fœnic'ulum. Fennel seed. Carminative. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Frangu'la. Buckthorn bark. Cathartic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

G.

Gal'la. Nutgall. Astringent. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Gam'bir. Gambir. An extract prepared from the leaf. Astringent. Dose, 1 gm. or 15 grs.

Gelat'inum. Gelatine. Obtained from animal tissues by treatment with boiling water.

Gelat'inum glycerina'tum. Glycerinated gelatine. A jelly made from glycerin and gelatine.

Gelsem'ium. Yellow jasmine root. Antispasmodic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Gentia'na. Gentian root. Bitter tonic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Gera'nium. Crane's-bill—the root. Astringent. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Glan'dulæ thyroi'deæ sic'cæ. Desiccated thyroid glands. The thyroid glands of the sheep, purified, dried and powdered. Alterative. Antifat. Hemostatic. Dose, 0.250 gm., or 4 grs.

Glan'dulæ suprare'nales sic'cæ. Desiccated suprarenal glands. The suprarenal glands of the sheep or ox, cleaned, dried and powdered. Alterative. Hemostatic. Vasoconstrictor. Dose, 0.250 gm., or 4 grs.

Glyceri'num. Glycerin. Vehicle for other medicines.

Glyceri'tum ac'idi carbol'ici. Glycerite of carbolic acid. Antiseptic application.

Glyceri'tum ac'idi tan'nici. Glycerite of tannic acid. Astringent application.

Glyceri'tum am'yli. Glycerite of starch. Emollient application.

Glyceri'tum boroglyceri'ni. Glycerite of boroglycerin. Antiseptic application.

Glyceri'tum fer'ri, quini'næ et strychni'næ phospha'tum. Glycerite of phosphates of iron, quinine and strychnine. Contains .08 per cent. of strychnine. Tonic. Dose, 1 c.c., or 15 ♏. ($=\frac{1}{80}$ strych.)

Glyceri'tum hydras'tis. Glycerite of hydrastis. Astringent and antiseptic application.

Glyceri'tum vitel'li. Glycerite of yolk of egg. Used for emulsifying oils.

Glycyrrhi'za. Licorice root. Expectorant. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Glycyrrhizi'num ammonia'tum. Ammoniated glycyrrhizin. The sweet principle from licorice root. Used for flavoring purposes.

Gossyp'ii ra'dicis cor'tex. Cotton-root bark. Emmenagogue. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Gossyp'ium purifica'tum. Purified cotton. For surgical dressings.

Grana'tum. Pomegranate bark. Astringent. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Grinde'lia. Grindelia leaves. Antispasmodic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Guaia'ci lig'num. Guaiacum wood. Alterative. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Guaia'ci resi'na. Resin of guaiacum. Alterative; stimulant. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Guai'acol. Guaiacol. The chief constituent of wood creosote. Antiseptic. Dose, 0.500 c.c., or 8 ♏.

Guai'acolis car'bonas. Guaiacol carbonate. Antiseptic. Dose, 1 gm., or 15 grs.

Guara'na. Guarana—the crushed seeds. Stimulant. Dose, 5 to 30 grs., or 0.325 to 2 gm.

H.

Hæmatox'ylon. Logwood. Astringent. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Hamame'lis. Witch-hazel leaves. Astringent. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Hamamel'idis cor'tex. Hamamelis bark. Astringent. Dose, 2 gm., or 30 grs.

Hedeo'ma. Pennyroyal leaves. Stimulant. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Hexamethylenami'na. Hexamethylenamine. **Urotro'pin** (Trade name). From formaldehyde by ammonia. Diuretic. Uric acid solvent. Antiseptic. Dose, 0.250 gm., or 4 grs.

Homat'ropinæ hydrobro'midum. Homatropine hydrobromide. An artificial alkaloid. Mydriatic. Dose, 0.0005 gm., or. $\frac{1}{120}$ gr.

Hydrar'gyri chlo'ridum corro'sivum. Corrosive mercuric chlorid. Corrosive chlorid of mercury. Corrosive sublimate. Bichlorid of mercury. Perchlorid of mercury. Alterative. Dose, $\frac{1}{24}$ to $\frac{1}{8}$ of a gr., or 0.002 to 0.008 gm.

Hydrar'gyri chlo'ridum mi'te.* Mild mercurous chlorid. Mild chlorid of mercury. Calomel. Subchlorid of mercury. Cholagogue. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Hydrar'gyri cyan'idum. Cyanid of mercury. Alterative; sedative. Dose, $\frac{1}{24}$ to $\frac{1}{8}$ of a gr., or 0.003 to 0.008 gm.

Hydrar'gyri iod'idum fla'vum. Yellow iodid of mercury. Alterative. Dose, $\frac{1}{4}$ to $\frac{1}{2}$ gr., or 0.016 to 0.030 gm.

Hydrar'gyri iod'idum ru'brum. Red iodid of mercury. Alterative. Dose, $\frac{1}{16}$ to $\frac{1}{4}$ of a gr., or 0.004 to 0.016 gm.

Hydrar'gyri ox'idum fla'vum. Yellow oxid of mercury. Stimulant. External use.

Hydrar'gyri ox'idum ru'brum. Red oxid of mercury. Red precipitate. Stimulant. External use.

Hydrar'gyri subsul'phas fla'vus. Turpeth mineral. Yellow subsulphate of mercury. Alterative. Dose, 2 to 4 grs., or 0.13 to 0.26 gm.

Hydrar'gyrum. Mercury. Quicksilver. Alterative. Dose, 1 to 3 grs., or 0.065 to 0.195 gm.

Hydrar'gyrum ammonia'tum. Ammoniated mercury. White precipitate. Stimulant; alterative. External use.

Hydrar'gyrum cum cre'ta. Mercury with chalk. Gray powder. Alterative. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Hydrasti'na. Hydrastine. An alkaloid from hydrastis. Tonic. Hemostatic. Sedative. Dose, 0.030 gm., or $\frac{1}{2}$ gr.

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*Under the heading Mercury Salts, it has been advised that only the common names corrosive sublimate and calomel be used. See text.

Hydrastini'næ hydrochlo'ras. Hydrastinine hydrochlorate. Oxytocic. Dose, ½ to 1 gr., or 0.033 to 0.065 gm.

Hydras'tis. Golden seal—root. Tonic; cathartic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Hyosci'næ hydrobro'mas. Hyoscine hydrobromate. Alkaloid from hyoscyamus. Sedative; narcotic. Dose, $\frac{1}{100}$ to $\frac{1}{60}$ of a gr., or 0.0006* to 0.001 gm.

Hyoscyami'næ hydrobro'mas. Hyoscyamine hydrobromate. Alkaloid from hyoscyamus. Narcotic. Dose, $\frac{1}{60}$ of a gr., or 0.001 gm.

Hyoscyami'næ sul'phas. Hyoscyamine sulphate. Narcotic. Dose, $\frac{1}{60}$ of a gr., or 0.001 gm.

Hyoscy'amus. Hyoscyamus, or henbane leaves. Narcotic. Dose, 1 to 3 grs., or 0.065 to 0.195 gm.

I.

Ichthyocol'la. Isinglass. Fish gelatin. Used in the preparation of jellies.

Illi'cium. Star anise seed. Carminative. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Infu'sa. Infusions. Whenever an infusion is ordered, and the strength not given, use one ounce of herb to a pint of water. See in the text, under title of Infusions.

Infu'sum cincho'næ. Infusion of Peruvian bark. Tonic; antipyretic. Dose, f ℥j to f ℥ij, or 30 to 60 c.c.

Infu'sum digita'lis. Infusion of digitalis, or foxglove. Stimulant. Dose, f ℥ss to f ℥ij, or 2 to 8 c.c. One fluidram of this infusion equals about 1 gr. of the drug.

Infu'sum pru'ni virginia'næ. Infusion of wild cherry bark. Sedative. Dose, f ℥j to f ℥ij, or 30 to 60 c.c.

Infu'sum sen'næ compos'itum. Compound infusion of senna. Black draught. Cathartic. Dose, f ℥iv to f ℥ij, or 16 to 60 c.c.

In'ula. Elecampane—the root. Stimulant; alterative. Dose, 5 to 30 grs. or 0.325 to 2 gm.

Iodofor'mum. Iodoform. Used in antiseptic dressings.

Iod'olum. Iodol. An iodine compound used as an antiseptic. Dose. 0.250 gm., or 4 gr.

Io'dum. Iodine. Used externally as an alterative.

Ipecacuan'ha. Ipecac—the root. Emetic. Dose, 10 to 30 grs., or 0.650 to 2 gm. Expectorant. Dose, 1 to 3 grs., or 0.065 to .195 gm.

I'ris. Blue flag—the root. Cathartic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

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*There are no names for the fractional parts of a milligram; 0.0006 is read $\frac{6}{10}$ of a milligram.

J.

Jala'pa. Jalap—the root. Cathartic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Jug'lans. Butternut bark. Laxative. Dose, 5 to 30 grs., or 0.325 to 2 gm.

K.

Kama'la. Kamala. Anthelmintic; tenicide. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Kaoli'num. Kaoline. A native aluminum silicate. Used externally as a cataplasm to allay inflammation.

Ki'no. Kino; juice from the wood. Astringent. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Krame'ria. Rhatany—the root. Astringent. Dose, 5 to 30 grs., or 0.325 to 2 gm.

L.

Lactuca'rium. Lactucarium. The dried juice. Anodyne. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Lap'pa. Burdock root. Laxative. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Leptan'dra. Culver's root. Cathartic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Limo'nis cor'tex. Lemon peel. Used as a flavor.

Limo'nis suc'cus. Lemon juice. Refrigerant. Dose, the juice of one or more lemons.

Linimen'tum ammo'niæ. Ammonia liniment. Stimulant. External use.

Linimen'tum belladon'næ. Belladonna liniment. Anodyne. External use.

Linimen'tum cal'cis. Lime liniment. Carron oil.

NOTE.—In view of the sudden need for this preparation in burn cases, this is the formula: Lime water, raw linseed oil, equal parts.

Linimen'tum campho'ræ. Camphor liniment. Anodyne. External use.

Linimen'tum chlorofor'mi. Chloroform liniment. Anodyne.

Linimen'tum sapo'nis. Soap liniment. Stimulant; alterative.

Linimen'tum sapo'nis mol'lis. Soft soap liniment. Stimulant; emollient; detergent.

Linimen'tum sina'pis compos'itum. Compound mustard liniment. Rubefacient.

Linimen'tum terebin'thinæ. Turpentine liniment. Stimulant.

Li'num. Linseed. Flax-seed. Demulcent in form of infusion. Used in the ground state, as flax-seed meal in poultices.

Li'quor ac'idi arseno'si. Solution of arsenous acid. Alterative. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c. 1 ♏ = $\frac{1}{100}$ of a gr. of the acid.

Li'quor ammo'nii aceta'tis. Solution of ammonium acetate. Spirit of mindererus. Diaphoretic. Dose, f ℥j to f ʒj, or 4 to 30 c.c.

Li'quor antisep'ticus. Antiseptic solution. Composed of boric acid, benzoic acid, thymol, eucalyptol, oil peppermint, oil gaultheria, oil of thyme, alcohol and water.

Li'quor ar'seni et hydrar'gyri iod'idi. Solution of arsenic and mercuric iodide. Donovan's solution. Alterative. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c.

Li'quor cal'cis. Lime water. Ant-acid. Dose, f ℥j to f ʒij, or 4 to 60 c.c.

Li'quor creso'lis compos'itus. Compound solution of cresol. A coal-tar product rendered soluble in water by the admixture of soap. Antiseptic.

Li'quor fer'ri aceta'tis. Solution of iron acetate. Tonic. Dose, 1 to 10 ♏, or 0.065 to 0.65 c.c.

Li'quor fer'ri chlo'ridi. Solution of iron chloride. Tonic. Dose, 1 to 10 ♏, or 0.065 to 0.65 c.c.

Li'quor fer'ri citra'tis. Solution of iron citrate. Tonic. Dose, 1 to 10 ♏, or 0.065 to 0.65 c.c.

Li'quor fer'ri et ammo'nii aceta'tis. Solution of iron and ammonium acetate. Basham's mixture. Diuretic. Dose, f ℥j to f ʒviij or 4 to 30 c.c.

Li'quor fer'ri nitra'tis. Solution of iron nitrate.

Li'quor fer'ri subsulpha'tis. Solution of iron subsulphate. Monsel's solution. Styptic. Dose, 2 to 10 ♏, or 0.13 to 0.65 c.c.

Li'quor fer'ri tersulpha'tis. Solution of iron sulphate. Tonic. Dose, 1 to 5 ♏, or 0.065 to 0.65 c.c.

Li'quor formaldehy'di. Solution formaldehyd. From methyl or wood alcohol.

Li'quor hydrar'gyri nitra'tis. Solution of mercuric nitrate.

Li'quor io'di compos'itus. Compound solution of iodine. Lugol's solution. Alterative. Dose, 1 to 10 ♏, or 0.065 to 0.65 c.c.

Li'quor magne'sii citra'tis. Solution of magnesium citrate. Cathartic. Dose, f ℥j to f ʒxij, or 30 to 360 c.c.

Li'quor plum'bi subaceta'tis. Solution of subacetate of lead. Used externally.

Li'quor plum'bi subaceta'tis dilu'tus. Diluted solution of lead subacetate. Astringent. External use.

Li'quor potas'sæ. Solution of potassa. Ant-acid; diuretic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Li'quor potas'sii arseni'tis. Solution of potassium arsenite. Fowler's solution. Alterative. Dose, 1 to 10 ♏, or 0.065 to 0.65 c.c. 1 ♏ = $\frac{1}{100}$ of a grain of potassium arsenite.

Li'quor potas'sii citra'tis. Solution of potassium citrate. Diuretic. Dose, f℥j to f℥j, or 4 to 30 c.c.

Li'quor so'dæ. Solution of soda. Seldom used uncombined.

Li'quor so'dæ chlora'tæ. Solution of chlorinated soda. Labarraque's solution. Disinfectant.

Li'quor so'dii arsena'tis. Solution of sodium arsenate. Alterative. Dose, 1 to 10 ♏, or 0.065 to 0.65 c.c.

Li'quor so'dii phospha'tis compos'itus. Compound solution of sodium phosphate. 1 c.c. equal 1 gm. of the salt. Cathartic. Dose, 8 c.c., or f ℥ij.

Li'quor so'dii sili'cis. Solution of sodium silicate. Used in surgery mechanically.

Li'quor zinci chlo'ridi. Solution of zinc chloride. Deodorizer and disinfectant.

Lith'ii ben'zoas. Lithium benzoate. Diuretic. Dose, 10 to 30 grs., or 0.65 to 2 gm.

Lith'ii bro'midum. Lithium bromide. Hypnotic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Lith'ii car'bonas. Lithium carbonate. Antacid. Dose, 5 to 15 grs., or 0.325 to 1 gm.

Lith'ii ci'tras. Lithium citrate. Antacid. Dose, 10 to 30 grs., or 0.65 to 2 gm.

Lith'ii ci'tras efferves'cens. Effervescent lithium citrate. Ant-acid. Dose, ℥j to ℥ij, or 4 to 8 gm.

Lith'ii salicyl'as. Lithium salicylate. Antirheumatic. Dose, 10 to 30 grs., or 0.65 to 2 gm.

Lobe'lia. Lobelia leaves. Emetic. Dose, 1 to 3 grs., or 0.065 to 0.195 gm.

Lupuli'num. Lupulin. A powder from the hop flower. Hypnotic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Lycopo'dium. Lycopodium. A vegetable powder. Used externally as an absorbent.

M.

Ma'cis. Mace. The envelope of the nutmeg. Carminative; sedative. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Magne'sia. Calcined magnesia. Cathartic. Dose, 5 to 60 grs., or 0.325 to 4 gm.

Magne'sia pondero'sa. Heavy calcined magnesia. Cathartic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Magne'sii car'bonas. Magnesium carbonate. Antacid. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Magne'sii ci'tras efferves'cens. Effervescent magnesium citrate. Magnesium citrate mechanically wrought into granular form. Cathartic. Dose, ℥j to ℥j, or 4 to 30 gm.

Magne'sii sul'phas. Magnesium sulphate. Epsom salt. From magnesium carbonate by sulphuric acid. Cathartic. Dose, ʒj to ʒviij, or 4 to 30 gm.

Magne'sii sul'phas efferves'cens. Effervescent magnesium sulphate. Cathartic. 50 per cent. magnesium sulphate. Dose, 16 gm., or 240 gr.

Mal'tum. Malt. The grain of barley partly germinated or sprouted artificially and dried.

Manga'ni diox'idum. Manganese dioxide or binoxide or black oxide. Tonic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Manga'ni hypophos'phis. Manganese hypophosphite. Nerve tonic. Dose, 0.200 gm., or 3 gr.

Manga'ni sul'phas. Manganese sulphate. Hepatic stimulant. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Man'na. Manna. A sugary vegetable excretion. Cathartic. Dose, ʒj to ℥j, or 4 to 30 gm.

Marru'bium. Horehound leaves. Tonic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Mas'sa copai'bæ. Mass of copaiba. A mixture of copaiba and magnesia.

Mas'sa fer'ri carbona'tis. Mass of iron carbonate. Tonic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.*

Mas'sa hydrar'gyri. Blue mass. Alterative. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Mas'tiche. Mastic, a gum. Alterative stimulant. Dose, 1 to 5 grs. or 0.065 to 0.325 gm.

Mat'ico. Matico leaves. Tonic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Matrica'ria. German chamomile flowers. Tonic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Mel. Honey. Used as a vehicle.

Mel despuma'tum. Clarified honey. Used as a vehicle.

Mel ro'sæ. Honey of rose. From rose petals and honey. Used as a vehicle.

Melis'sa. Balm-leaves. Diaphoretic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Menisper'mum. Canadian moonseed. Alterative. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Men'tha piperi'ta. Peppermint leaves. Carminative. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Men'tha vir'idis. Spearmint leaves. Carminative. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Men'thol. Menthol. A crystalline substance from oil of peppermint. Chief use as a local anesthetic.

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*Massæ, masses. Mass is the name given to drugs which have been formed into a plastic mass in readiness for division into pill form.

Me'thyl salicy'las. Methyl salicylate. Artificial oil of wintergreen. Alterative in rheumatic affections. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c.

Methylthioni'næ hydrochlori'dum. Methylthionine hydrochloride. Methylene blue. Synthetic product. Bactericide. Dose, 0.250 gm., or 4 gr.

Meze'reum. Mezereum bark. Stimulant. Dose, 5 to 30 grs., or 0.325 to 2 gm. Also externally as a vesicant.

Mistu'ra cre'tæ. Chalk mixture. Chalk, gum Arabic, sugar, cinnamon water. Astringent. Dose, f ʒj to f ʒiv, or 4 to 15 c.c.

Mistu'ra fer'ri compo'sita. Compound iron mixture. Iron, myrrh, spirit of lavender, and rose water. Tonic. Dose, f ʒj to f ʒiv, or 4 to 15 c.c.

Mistu'ra glycyrrhi'zæ compos'ita. Compound licorice mixture. Paregoric, wine of antimony, spirit of nitre, sugar, licorice, water. Expectorant. Dose, f ʒj to f ʒiv, or 4 to 15 c.c. Each tablespoonful or f ℥ss or 15 c.c. contains ⅛ of a grain of opium.

Mistu'ra rhe'i et so'dæ. Mixture of rhubarb and soda. Rhubarb, ipecac, essence of peppermint, glycerin, sodium bicarbonate. Stomachic; carminative. Dose, f ʒj to f ʒiv, or 4 to 15 c.c.

Morphi'na. Morphine. Alkaloid from opium. Narcotic; anodyne. Dose, $\frac{1}{16}$ to ¼ gr., or 0.004 to 0.016 gm.

Morphi'næ ac'etas. Morphine acetate. From morphine by acetic acid. Anodyne. Dose, $\frac{1}{16}$ to ¼ gr. or 0.004 to 0.016 gm.

Morphi'næ hydrochlo'ras. Morphine hydrochlorate. From morphine by hydrochloric acid. Anodyne. Dose, $\frac{1}{16}$ to ¼ gr., or 0.004 to 0.016 gm.

Morphi'næ sul'phas. Morphine sulphate. From morphine by sulphuric acid. Anodyne. Dose, $\frac{1}{16}$ to ¼ gr., or 0.004 to 0.016 gm.

Mos'chus. Musk. A secretion from the musk deer. Antispasmodic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Mucila'go aca'ciæ. Mucilage of gum Arabic. Demulcent drink.

Mucila'go sas'safras medul'læ. Mucilage of sassafras pith. Domestic medicine as an eye-wash.

Mucila'go tragacan'thæ. Mucilage of tragacanth.

Mucila'go ul'mi. Mucilage of elm bark. Demulcent drink.

Myris'tica. Nutmeg—the seed. Sedative; carminative. Dose, 5 to 30 grs., or 0.325 to 2 c.c.

Myr'rha. Myrrh—the gum. Stimulant. Dose, 5 to 30 grs., or 0.325 to 2 c.c.

N.

Naphtali'num. Naphtalene. One of the coal-tar products. Antiseptic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Naph'tol. Beta-naphtol. One of the coal-tar products. Antiseptic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Nux vom'ica. Nux vomica; seed. Tonic. Dose, 1 to 3 grs., or 0.065 to 0.195 gm.

O.

Olea'tum a'tropinæ. Oleate of atropine. From atropine by oleic acid. Anodyne, antispasmodic. External use.

Olea'tum cocai'næ. Oleate of cocaine. From cocaine by oleic acid.

Olea'tum hydrar'gyri. Oleate of mercury. From oxid of mercury by oleic acid. Alterative; stimulant. For external use.

Olea'tum quini'næ. Oleate of quinine. From quinine by oleic acid.

Olea'tum veratri'næ.* Oleate of veratrine. From veratrine and oleic acid. Irritant. External use.

Olea'tum zin'ci. Oleate of zinc. From zinc oxid and oleic acid. Absorbent. External use.

Oleoresi'na aspid'ii. Oleoresin of male fern. Prepared from the root. Tenicide. Dose, f ℥ss to f ℥j, or 2 to 4 c.c.

Oleoresi'na cap'sici. Oleoresin of capsicum. Prepared from the fruit. Stimulant. Dose, ¼ to 1 ♏, or 0.016 to 0.065 c.c.

Oleoresi'na cube'bæ. Oleoresin of cubeb. Prepared from the berry. Diuretic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Oleoresi'na lupuli'ni. Oleoresin of lupulin. Prepared from the powder. Hypnotic. Dose, 1 to 10 ♏, or 0.065 to 0.65 c.c.

Oleoresi'na pi'peris. Oleoresin of black pepper. Prepared from the berries. Stimulant. Dose, ¼ to 2 ♏, or 0.016 to 0.130 c.c.

Oleoresi'na zingibe'ris. Oleoresin of ginger. Stimulant. Dose, ½ to 2 ♏, or 0.033 to 0.130 c.c.

O'leum ad'ipis. Lard oil. Expressed from cold lard.

O'leum æthe'reum. Ethereal oil. From alcohol by sulphuric acid.

O'leum amyg'dalæ ama'ræ.† Oil of bitter almond.

O'leum amyg'dalæ expres'sum. Expressed oil of almonds. Laxative. Dose, f ℥j to f ℥iv, or 4 to 16 c.c.

O'leum ani'si. Oil of anise. Carminative. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c.

O'leum auran'tii cor'ticis. Oil of orange peel.

O'leum auran'tii flo'rum. Oil of orange flowers.

O'leum bergamot'tæ. Oil of bergamot.

O'leum betu'læ volat'ile. Volatile oil of betula. Substitute for oil of wintergreen. Alterative. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c.

O'leum cadi'num. Oil of cade. Stimulant. External use.

O'leum cajupu'ti. Oil of cajuput. Stimulant. External use.

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*Veratrine is an alkaloid obtained from a seed called sabadilla seed.

†Unless otherwise expressed, these volatile oils are used as flavors.

O'leum ca'rui. Oil of caraway seed. Carminative. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c.

O'leum caryophyl'li. Oil of cloves. Stimulant. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c.

O'leum chenopo'dii. Oil of American wormseed. Anthelmintic. Dose, 3 to 10 ♏, or 0.195 to 0.65 c.c.

O'leum cinnamo'mi. Oil of cinnamon. Stimulant. Dose, 1 to 10 ♏, or 0.065 to 0.65 c.c.

O'leum copai'bæ. Oil of copaiba. Stimulant. Dose, 1 to 10 ♏, or 0.065 to 0.65 c.c.

O'leum corian'dri. Oil of coriander seed. Stimulant. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c.

O'leum cube'bæ. Oil of cubeb berries. Stimulant. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c.

O'leum erigeroni'tis. Oil of fleabane. Stimulant. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c.

O'leum eucalyp'ti. Oil of eucalyptus. Expectorant. Dose, 1 to 10 ♏, or 0.065 to 0.65 c.c.

O'leum fœnic'uli. Oil of fennel seed. Carminative. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c.

O'leum gaulthe'riæ. Oil of wintergreen. Alterative. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

O'leum gossyp'ii sem'inis. Oil of cotton seed. For external use.

O'leum hedeo'mæ. Oil of pennyroyal. Stimulant. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c.

O'leum junip'eri. Oil of juniper berries. Diuretic. Dose, 1 to 10 ♏, or 0.065 to 0.65 c.c.

O'leum lavandulæ florum. Oil of lavender flowers. Stimulant. External use.

O'leum limo'nis. Oil of lemon peel.

O'leum li'ni. Oil of linseed or flaxseed. External use.

O'leum men'thæ piperi'tæ. Oil of peppermint leaves. Carminative. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c.

O'leum men'thæ vir'idis. Oil of spearmint leaves. Carminative. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c.

O'leum morrhu'æ. Cod-liver oil. Tonic. Dose, f ℥j to f ℥iv, or 4 to 16 c.c.

O'leum myr'ciæ. Oil of bay leaves. Stimulant. External use.

O'leum myris'ticæ. Oil of nutmeg. Sedative. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c.

O'leum ol'ivæ. Olive oil. Laxative. Dose, f ℥j to f ℥iv, or 4 to 16 c.c.

O'leum phosphora'tum. Phosphorized oil. Tonic. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c. One minim contains $\frac{1}{100}$ of a gr. of phosphorus.

O'leum pi'cis liq'uidæ. Oil of tar. Stimulant. External use.

O'leum pimen'tæ. Oil of allspice berry. Carminative. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c.

O'leum ric'ini. Castor oil. Cathartic. Dose, f ℥j to f ℥j, or 4 to 30 c.c.

O'leum ro'sæ. Oil of rose petals.

O'leum rosmari'ni. Oil of rosemary leaves. Stimulant. External use.

O'leum sabi'næ. Oil of savine. Uterine stimulant. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c.

O'leum santa'li. Oil of sandalwood. Stimulant. Dose, 10 to 30 ♏, or 0.65 to 2 c.c.

O'leum sas'safras. Oil of sassafras bark. Stimulant. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c.

O'leum ses'ami. Teel oil. Benné oil. Laxative. Dose, f ℥j to f ℥iv, or 4 to 16 c.c.

O'leum sina'pis volat'ile. Volatile oil of mustard. Rubefacient. External use.

O'leum terebin'thinæ. Oil of turpentine. Stimulant. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

O'leum terebin'thinæ rectifica'tum. Rectified oil of turpentine.

O'leum theobroma'tis. Cacao butter. Used for making suppositories.

O'leum thy'mi. Oil of thyme. Stimulant. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c.

O'leum tig'lii. Croton oil. Violent cathartic. Poison. Dose, ½ to 2 ♏, or 0.033 to 0.13 c.c.

O'pii pul'vis. Powdered opium containing 12½ per cent. of morphine—about ⅛ of a grain of morphine to each grain of opium. Narcotic. Dose, ½ to 2 grs., or 0.033 to 0.13 gm.

O'pium. Gum opium. The concrete milk-juice from the Eastern poppy; varying in the amount of alkaloid present. Narcotic. Dose, ½ to 2 grs., or 0.033 to 0.13 gm.

O'pium deodora'tum. Deodorized opium. Opium from which the narcotine has been removed. It is less nauseating than native opium. Narcotic. Dose, ½ to 2 grs., or 0.033 to 0.13 gm.

O'pium granula'tum. Granulated opium. One of the several forms of opium.

P.

Pancreati'num. Pancreatin. A digestive ferment from the pancreas of the calf.

Paraffi'num. Paraffin. Obtained from petroleum. External use, in ointments.

Paraldehy'dum. Paraldehyd. A product of the decomposition of alcohol. Hypnotic. Dose, 1 to 3 ♏, or 0.065 to 0.195 c.c.

Parei'ra. Pareira brava—root. Diuretic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Pelletieri'næ tan'nas. Tannate of pelletierine. A mixture of alkaloids obtained from pomegranate. Vermicide. Dose, 0.250 gm., or 4 gr.

Pe'po. Pumpkin seed. Tenicide. Dose, ½ to 2 oz., or 15 to 60 gm.

Pepsi'num. Pepsin. A digestive ferment from the stomach of the hog. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Pepsi'num saccha'rum. Saccharated pepsin. One part pepsin, ten parts sugar of milk.

Petrola'tum al'bum. White petrolatum. Obtained from petroleum and used externally in ointments.

Petrola'tum liq'uidum. Liquid petrolatum. Distilled from petroleum.

Petrola'tum mol'le. Soft petrolatum. Distilled from petroleum.

Petrola'tum spis'sum. Hard petrolatum. Distilled from petroleum. These are used as ointments, other substances being added to them for medication. Vaselin is similar to petroleum; so is cosmoline.

Phe'nol. Phenol. (Carbolic acid.) A coal-tar product. Dose, 0.065 gm., or 1 gr.

Phe'nol liquefac'tum. Liquefied phenol. Composed of 86.4 per cent. or more of phenol and the balance water. Antiseptic. Dose, 0.050 c.c., or 1 ♏.

Phos'phorus. Phosphorus. Obtained from bones. Stimulant. Dose, $\frac{1}{60}$ of a gr., or 0.001 gm.

Physostig'ma. Calabar bean. Sedative. Dose, ½ to 2 grs., or 0.033 to 0.13 gm.

Physostigmi'næ salicy'las. Physostigmine salicylate. Sedative. Dose, $\frac{1}{100}$ of a gr., or 0.00065 gm.

Physostigmi'næ sul'phas. Physostigmine sulphate. Sedative. Dose, $\frac{1}{100}$ of a gr., or 0.00065 gm.

Phytolac'cæ fruc'tus. Poke berries. Laxative. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Phytolac'cæ ra'dix. Poke root. Laxative. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Picrotox'inum. Picrotoxin. Active principle of fish berry. Tonic; antispasmodic. Dose, $\frac{1}{60}$ of a gr., or 0.001 gm.

Pilocarpi'næ hydrochlo'ras. Pilocarpine hydrochlorate. Diaphoretic. Dose, $\frac{1}{10}$ of a gr., or 0.006 gm.

Pilocarpi'næ ni'tras. Pilocarpine nitrate. An alkaloid obtained from pilocarpus leaves. Diaphoretic, diuretic, scialagogue, myotic. Dose, 0.010 gm., or $\frac{1}{6}$ gr.

Pilocar'pus. Jaborandi leaves. Diaphoretic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Pil'ulæ al'oes. Pills of aloes. Cathartic. Dose, 1 to 5 pills (2 grs. each).

Pil'ulæ al' oes et asafœ'tidæ. Pills of aloes and asafetida. Cathartic; anodyne. Dose, 1 to 5 pills.

Pil'ulæ al'oes et fer'ri. Pills of aloes and iron. Tonic; cathartic. Dose, 1 to 3 pills.

Pil'ulæ al'oes et mas'tiches. Pills of aloes and mastic. Laxative. Dose, 1 to 5 pills.

Pil'ulæ al'oes et myr'rhæ. Pills of aloes and myrrh. Stimulant; cathartic. Dose, 1 to 5 pills.

Pil'ulæ antimo'nii compos'itæ. Compound pills of antimony. Alterative. Dose, 1 to 3 pills.

Pil'ulæ asafœ'tidæ. Pills of asafetida. Sedative. Dose, 1 to 5 pills.

Pil'ulæ cathar'ticæ compos'itæ. Compound cathartic pills. Calomel, gamboge, colocynth, and jalap. Cathartic. Dose, 1 to 5 pills.

Pil'ulæ cathar'ticæ vegetab'iles. Vegetable cathartic pills. Cathartic. Dose, 1 to 5 pills.

Pil'ulæ fer'ri carbona'tis. *Blaud's* pills. Pills of iron carbonate. Tonic. Dose, 1 to 5 pills.

Pil'ulæ fer'ri iod'idi. Pills of iron iodide. Tonic; alterative. Dose, 1 to 3 pills.

Pil'ulæ laxati'væ compos'itæ. Compound laxative pills. Composed of aloin, strychnine, ext. belladonna, ipecac, glycyrrhiza. ($\frac{1}{120}$ strychnine to each pill.) Laxative. Dose, 2 pills.

Pil'ulæ o'pii. Pills of opium (1 gr.). Narcotic. Dose, 1 or 2 pills.

Pil'ulæ phos'phori. Pills of phosphorus ($\frac{1}{100}$ of a gr.). Tonic. Dose, 1 or 2 pills.

Pil'ulæ podophyl'li, belladon'næ et cap'sici. Pills of podophyllin, belladonna and capsicum. Composed of podophyllin, belladonna, capsicum. Cathartic. Dose, 1 pill.

Pil'ulæ rhe'i. Pills of rhubarb. Cathartic; astringent. Dose, 1 to 5 pills.

Pil'ulæ rhe'i compos'itæ. Compound rhubarb pills. Cathartic. Dose, 1 to 5 pills.

Pimen'ta. Allspice fruit. Carminative. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Pip'er. Black pepper fruit. Stimulant. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Piperi'num. Piperin. Active principle from pepper. Stimulant. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Pix burgun'dica. Burgundy pitch. A resinous exudation. Stimulant. External use as a plaster.

Pix liq'uida. Tar. An oleoresin from pine wood. Stimulant. Used in the form of syrup of tar.

Plum'bi ac'etas. Lead acetate. Sugar of lead. From lead by acetic acid. Astringent; sedative. Dose, $\frac{1}{2}$ to 3 grs., or 0.033 to 0.195 gm.

Plum'bi car'bonas. Lead carbonate. From lead by carbonic acid gas. Used externally.

Plum'bi iod'idum. Lead iodide. From lead nitrate and potassium iodid. When given internally—dose, $\frac{1}{2}$ to 3 grs., or 0.033 to 0.195 gm.

Plum'bi ni'tras. Lead nitrate. Used for preparing the iodide.

Plum'bi ox'idum. Lead oxide. Used for preparing lead plaster.

Podophyl'lum. Podophyllum or May apple—root. Cathartic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Potas'sa. Caustic potash. Potassium hydrate. Made from potassium carbonate and lime. Used as a caustic.

Potas'sa cum cal'ce. Potash with lime. By mixing lime and potash together in powder. Used as a caustic.

Potas'sa sulphura'ta. Sulphurated potash. By heating sulphur and potassium carbonate. Alterative. Dose, 1 to 5 grs., or 0.065 to 0.325 gm.

Potas'sii ace'tas. Potassium acetate. By the action of acetic acid upon potassium carbonate. Diuretic. Dose, 5 to 20 grs., or 0.325 to 1.3 gm.

Potas'sii bicar'bonas. Potassium bicarbonate. By causing potassium carbonate, water, and carbonic acid gas to unite. Antacid. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Potas'sii bichro'mas. Potassium bichromate. Obtained from a native chromate of iron. Alterative. Dose, $\frac{1}{5}$ of a gr., or 0.012 gm.

Potas'sii bitar'tras. Potassium bitartrate. Cream of tartar. A product deposited in wine casks. Refrigerant; laxative. Dose, ℥j to ℥iv, or 4 to 15 gm.

Potas'sii bromi'dum. Potassium bromide. By uniting the element bromine with potassium. Hypnotic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Potas'sii car'bonas. Potassium carbonate. Washed out from wood ashes. Antacid. Dose, 5 to 10 grs., or 0.325 to 0.65 gm.

Potas'sii chlo'ras. Potassium chlorate. By a process which brings fresh chlorine gas into contact with potassium hydrate. Prophylactic. Mainly as a wash for the throat.

Potas'sii ci'tras. Potassium citrate. Citric acid when mixed with potassium carbonate forms potassium citrate. Diaphoretic. Dose, 5 to 20 grs., or 0.325 to 1.3 gm.

Potas'sii ci'tras efferves'cens. Effervescing potassium citrate. Potassium bicarbonate and citric acid with sugar are mixed in a dry state and, when thrown into water, effervesce, forming a pleasing drink.

Potas'sii cyan'idum. Potassium cyanide. By hydrocyanic upon potassium carbonate, by a roundabout process. Sedative. Dose, $\frac{1}{8}$ of a gr., or 0.008 gm.

Potas'sii et so'dii tar'tras. Rochelle salt. Potassium and sodium tartrate. By mixing cream tartar and sodium carbonate. Laxative. Dose, ℥j to ℥iv, or 4 to 15 gm.

Potas'sii ferrocyan'idum. Potassium ferrocyanide. A compound combining potassium, iron, and hydrocyanic acid. Used chiefly in testing in chemical analysis.

Potas'sii hypophos'phis. Potassium hypophosphite. By mixing potassium carbonate with calcium hypophosphite, potassium hypophosphite is formed. Used in conjunction with other hypophosphites as an alterative in phthisis. Dose, 10 grs., or 0.65 gm.

Potas'sii iod'idum. Potassium iodide. From iodine and potassa. Alterative. Dose, 5 grs. to ℥j, or 0.325 to 30 gm.

Potas'sii ni'tras. Potassium nitrate. Found native in the soil of East India. Diuretic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Potas'sii perman'ganas. Potassium permanganate. Tonic. Dose, 1 or 2 grs., or 0.065 to 0.13 gm.

Potas'sii sul'phas. Potassium sulphate. By sulphuric acid upon potassium carbonate. Used as a diluent for other powders.

Pru'num. Prunes—the fruit. Laxative. One of the ingredients in confection of senna.

Pru'nus virginia'na. Wild cherry—bark. Sedative. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Pulsatil'la. Pulsatilla—the herb. Diaphoretic. Dose, 1 to 3 grs., or 0.065 to 0.195 gm.

Pul'vis acetanili'di compos'itus. Compound acetanilid powder. This powder resembles antikamnia and is composed of acetanilid, caffeine and sodium bicarbonate. Antineuralgic. Dose, 0.500 gm., or 7½ gr.

Pul'vis antimonia'lis. Antimonial powder. James' powder. A mixture of antimony oxide, and calcium phosphate. Diaphoretic. Dose, 3 to 5 grs., or 0.195 to 0.325 gm.

Pul'vis aromat'icus. Aromatic powder. Cardamom, ginger, cinnamon, and nutmeg. Carminative. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Pul'vis cre'tæ compos'itus. Compound chalk powder. Prepared chalk, sugar, and gum Arabic. Antacid; astringent. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Pul'vis efferves'cens compos'itus. Compound effervescing powder. Seidlitz powders. Rochelle powders. The small paper contains 35 grs. of tartaric acid. The large paper contains 40 grs. of sodium bicarbonate, and 120 grs. of Rochelle salt. Laxative. Dose, 2 powders in water.

Pul'vis glycyrrhi'zæ compos'itum. Compound licorice powder. German powder. Licorice, senna, sulphur, sugar, oil of fennel. Cathartic. Dose, ℥ss to ℥ij, or 2 to 8 gm.

Pul'vis ipecacuan'hæ et o'pii. Powder of ipecac and opium. Dover's powder. Anodyne; diaphoretic. Dose, 5 to 10 grs., or 0.325 to 0.65 gm.

Pul'vis jala'pæ compos'itus. Compound powder of jalap. Pulvis purgans. Jalap and cream of tartar. Cathartic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Pul'vis morphi'næ compos'itus. Compound powder of morphine. Tully's powder. Morphine, camphor, licorice, chalk. Anodyne. Dose, 5 to 10 grs., or 0.325 to 0.65 gm. Each grain equals $\frac{1}{10}$ of a gr. of morphine.

Pul'vis rhe'i compos'itus. Compound powder of rhubarb. Rhubarb, magnesia, and ginger. Cathartic. Dose, 10 grs. to ℥ij, or 0.65 to 8 gm.

Pyre'thrum. Pyrethrum—root. Sialagogue. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Pyrogal'lol. Pyrogallic acid. Made by heating gallic acid. Used externally.

Pyroxyli'num. Pyroxylin. Soluble guncotton. By the action of nitric acid upon cotton.

Q.

Quas'sia. Quassia—the wood. Bitter tonic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Quer'cus al'ba. White oak—bark. Astringent. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Quilla'ja. Quillaia—the bark. Expectorant. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Quinidi'næ sul'phas. Sulphate of quinidine. A cinchona alkaloid. Tonic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Quini'na. Quinine. Alkaloid of Peruvian or cinchona bark. Tonic; antipyretic. Dose, 1 to 15 grs., or 0.065 to 1 gm.

Quini'næ bisul'phas. Quinine bisulphate.

Quini'næ hydrobro'mas. Quinine hydrobromate.

Quini'næ hydrochlo'ras. Quinine hydrochlorate.

Quini'næ salicyl'as. Quinine salicylate. Antirheumatic. Dose, 0.250 gm., or 4 gr.

Quini'næ sul'phas. Quinine sulphate.

Quini'næ valeria'nas. Quinine valerianate.

These are salts, made by combining the alkaloid quinine with the acids indicated in the titles—viz., sulphuric, hydrobromic, hydrochloric, and valerianic. All are antipyretic, the last mentioned being also a nerve tonic. The doses are the same as quinine, also, with the exception of the last, which is 1 to 3 grs., or 0.065 to 0.195 gm.

R.

Resi'na. Resin, or rosin. Derived from the resinous exudation of the Southern pine. Used in making cerates and plasters.

Resi'na copai'bæ. Resin of copaiba. A product derived from balsam of copaiba. Urethral stimulant. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Resi'na jala'pæ. Resin of jalap. Obtained from jalap root. Cathartic. Dose, 2 grs., or 0.013 gm.

Resi'na podophyl'li. Resin of podophyllum. From the root. Cathartic. Dose, $\frac{1}{8}$ to 1 gr., or 0.008 to 0.065 gm.

Resi'na scammo'nii. Resin of scammony. From the root. Cathartic. Dose, 3 grs., or 0.195 gm.

Resorci'num. Resorcin. One of the products from coal-tar. Antiseptic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Rham'nus purshia'na. Cascara—the bark. Cathartic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Rhe'um. Rhubarb—the root. Cathartic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Rhus gla'bra. Rhus glabra. Sumac—the fruit. Diuretic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Rhus toxicoden'dron. Poison ivy—the leaves. Rubefacient. External use.

Ro'sa centifo'lia. Pale rose. Used to flavor confections.

Ro'sa gal'lica. Red rose. Used in confections.

Ru'bus. Blackberry—bark of root. Astringent. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Ru'bus idæ'us. Raspberry fruit. Used in form of syrup as a flavor.

Ru'mex. Yellow dock—root. Alterative. Dose, 5 to 30 grs., or 0.325 to 2 gm.

S.

Sa'bal. Sabal. The dried fruit. Tonic. Expectorant. Sedative. Dose, 1 gm., 15 grs.

Sabi'na. Savine—leaves. Stimulant. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Sac'charum. Sugar. The refined product of the sugar-cane.

Sac'charum lac'tis. Sugar of milk. Evaporating whey and allowing it to crystallize. Used as a diluent for other substances.

Safro'lum. Safrol. A constituent of sassafras oil. Carminative. Dose, 0.500 c.c., or 5 ♏.

Salici'num. Salicin. A glucoside obtained from the willow. Tonic. Dose, 1 gr., or 0.065 gm.

Sa'lol. Salol. One of the coal-tar products. Antiseptic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Sal'via. Sage—leaves. Astringent. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Sambu'cus. Elder—the flowers. Diaphoretic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Sanguina'ria. Bloodroot. Emetic; expectorant. Dose, 5 grs. to ʒss, or 0.325 to 2 gm.

San'talum ru'brum. Red saunders—the wood. Used as a color.

Santon'ica. Levant wormseed. Anthelmintic. Dose, 5 grs. to ʒss, or 0.325 to 2 gm.

Santoni'num. Santonin. An active principle from wormseed. Anthelmintic. Dose, 1 to 3 grs., or 0.065 to 0.195 gm.

Sa'po. Soap—white Castile. A compound made from olive oil and soda. Used as a detergent.

Sa'po mol'lis. Soft soap. Green soap. Made from various oils and potassa. Detergent.

Sarsaparil'la. Sarsaparilla—root. Alterative. Dose, 5 grs. to ℥ss, or 0.325 to 2 gm.

Sas'safras. Sassafras—bark of root. Stimulant. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Sas'safras medul'la. Sassafras-pith. Emollient. Used in eye-washes.

Scammo'nium. Scammony, a resin. Cathartic. Dose, 5 grs., or 0.325 gm.

Scil'la. Squill—the bulb. Expectorant. Dose, 1 to 3 grs., or 0.065 to 0.195 gm.

Scopa'rius. Broom-tops. Diuretic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Scopo'la. Scopola. The dried underground stem. Narcotic, anodyne. Dose, 0.045 gm., or ¾ gr.

Scopolami'næ hydrobro'midum. Scopolamine hydrobromide. An alkaloid obtained from scopola and related plants. Dose, 0.0005 gm., or $\frac{1}{133}$ grain. Mydriatic.

Scutella'ria. Scullcap—the herb. Antispasmodic. Dose, 5 grs. to ℥ss, or 0.325 to 2 gm.

Sen'ega. Senega—root. Expectorant. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Sen'na. Senna—leaves. Cathartic. Dose, 5 grs. to ℥ss, or 0.325 to 2 gm.

Serpenta'ria. Virginia snakeroot. Tonic. Dose, 5 grs., to ℈iss, or 0.325 to 2 gm.

Se'rum an'tidiphther'icum. Antidiphtheric serum. Diphtheria antitoxin. A liquid separated from the coagulated blood of the horse, immunized through the inoculation of diphtheric toxin. Dose, 3000 units. Immunizing dose for well persons, 500 units.

Se'vum. Suet from the sheep. Used in ointments.

Sina'pis al'ba. White mustard-seed.

Sina'pis ni'gra. Black mustard-seed. Emetic in form of powder mixed with water to form a cream, and given until vomiting occurs. Externally in the form of plaster or poultice as an irritant or vesicant.

So'da. Soda; caustic soda. Used as a caustic.

So'dii ac'etas. Sodium acetate. Formed when sodium carbonate and acetic acid are brought together. Diuretic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

So'dii ar'senas. Sodium arsenate. By bringing together sodium bicarbonate and white arsenic. Alterative. Dose, $\frac{1}{10}$ to ⅛ of a gr., or 0.003 to 0.008 gm.

So'dii ar'senas exsicca'tus. Exsiccated sodium arsenite (dried sodium arsenite). Alterative. Dose, 0.003 or $\frac{1}{10}$ gr.

So'dii ben'zoas. Sodium benzoate. Action of benzoic acid upon sodium carbonate. Alterative; diuretic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

So'dii bicar'bonas. Sodium bicarbonate. By injecting carbonic acid gas into a solution of sodium carbonate. Antacid. Dose, 5 grs., to ʒj, or 0.325 to 4 gm.

So'dii bisul'phis. Sodium bisulphite. Sulphurous acid forms it when brought into contact with sodium bicarbonate. Antiseptic; prophylactic. Dose, 5 grs. to ʒss, or 0.325 to 2 gm.

So'dii bo'ras. Sodium borate. Borax. Found native in California and Southern Europe. Antacid; diuretic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

So'dii bromi'dum. Sodium bromide. By acting upon hydrobromic acid with sodium carbonate. Hypnotic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

So'dii car'bonas. Sodium carbonate. From common salt by a complicated process involving the use of sulphuric acid and coal. Antacid. Dose, 5 grs., to ʒss, or 0.325 to 2 gm.

So'dii car'bonas exsicca'tus. Dried sodium carbonate.

So'dii car'bonas monohydra'tus. Monohydrated sodium carbonate. Antacid. Dose, .250 gm., or 4 gr.

So'dii chlo'ras. Sodium chlorate. From sodium tartrate and potassium chlorate. Prophylactic. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

So'dii chlori'dum. Sodium chloride. Common salt. From sea-water.

So'dii hypophos'phis. Sodium hypophosphite. Tonic in lung troubles. Dose, 5 to 15 grs., or 0.325 to 1 gm.

So'dii hyposul'phis. Sodium hyposulphite. Alterative; antiseptic. Dose, 5 to 15 grs., or 0.325 to 1 gm.*

So'dii iod'idum. Sodium iodide. By acting upon soda with iodine. Alterative. Dose, 5 to 30 grs., or 0.325 to 2 gm.

So'dii ni'tras. Sodium nitrate. Found native in South America. Alterative. Dose, 5 to 30 grs., or 0.325 to 2 gm.

So'dii ni'tris. Sodium nitrite. Used in preparing spirit of nitre.

So'dii phos'phas. Sodium phosphate. From bone-ash and sodium carbonate. Cathartic. Dose, ʒj or more, or 4 gm. or more.

So'dii pyrophos'phas. Sodium pyrophosphate. Used for chemic purposes.

So'dii salicyl'as. Sodium salicylate. By acting upon sodium carbonate with salicylic acid. Alterative in rheumatism. Dose, 5 to 30 grs., or 0.325 to 2 gm.

So'dii sul'phas. Sodium sulphate. Glauber's salt. It is a by-product in the making of hydrochloric acid. Cathartic. Dose, ʒj to ℥j, or 4 to 30 gm.

So'dii sul'phis. Sodium sulphite. By the action of sodium carbonate and sulphurous acid. Prophylactic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Sparteï'næ sul'phas. Sparteine sulphate. An alkaloid from the broom. Diuretic. Dose, ½ to 1 gr., or 0.008 to 0.065 gm.

*Wherever, as in these two cases, the statement as to the origin is omitted, it is on account of the complication of the process.

Spige'lia. Pinkroot—root. Vermifuge. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Spir'itus æthe'ris. Spirit of ether. A mixture of ether and alcohol. Stimulant. Dose, 10 to 20 ♏, or 0.65 to 1.3 c.c.

Spir'itus æthe'ris compos'itus. Hoffman's anodyne, or compound spirit of ether. Anodyne. Dose, 10 to 60 ♏, or 0.65 to 4 c.c.

Spir'itus æthe'ris nitro'si. Sweet spirit of nitre, or spirit of nitrous ether. Diuretic; diaphoretic. Dose, 15 ♏ to ℥ij, or 1 to 8 c.c.

Spir'itus ammo'niæ. Spirit of ammonia. A 10 per cent. alcoholic solution of ammonia gas. Stimulant. Dose, 10 to 30 ♏, or 0.65 to 2 c.c.

Spir'itus ammo'niæ aromat'icus. Aromatic spirit of ammonia. Flavored with oil of lemon, lavender, and nutmeg. Stimulant. Dose, ½ to ℥ij, or 2 to 8 c.c.

Spir'itus amyg'dalæ ama'ræ. Spirit of bitter almond. Used as a flavor.

Spir'itus ani'si. Spirit of anise. Carminative. Dose, 10 ♏ to f ℥j, or 0.65 to 4 c.c.

Spir'itus auran'tii. Spirit of orange. Used as a flavor.

Spir'itus auran'tii compos'itus. Compound spirit of orange. Oil of orange, lemon, anise, and coriander with alcohol. Used as a flavor.

Spir'itus camphoræ. Spirit of camphor. Stimulant. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Spir'itus chlorofor'mi. Spirit of chloroform. Stimulant. Dose, 5 to 60 ♏, or 0.325 to 4 c.c.

Spir'itus cinnamo'mi. Spirit of cinnamon. Carminative. Dose, 15 ♏ to f ℥ij, or 1 to 8 c.c.

Spir'itus frumen'ti. Whisky. Stimulant. Dose, f ℥j to f ℥ij, or 4 to 60 c.c.

Spir'itus gaulthe'riæ. Spirit of wintergreen. Carminative; antiseptic. Dose, f ℥ss to f ℥ij, or 2 to 8 c.c.

Spir'itus glonoi'ni. Spirit of glonoin. Spirit of nitroglycerin (1 per cent.). Stimulant. Dose, 1 ♏, or 0.065 c.c.

Spir'itus junip'eri. Spirit of juniper. Diuretic. Dose, 15 to 60 ♏, or 1 to 4 c.c.

Spir'itus junip'eri compos'itus. Compound spirit of juniper. Oil juniper, oil caraway, oil fennel seed. Diuretic. Dose, 15 to 60 ♏, or 1 to 4 c.c.

Spir'itus lavan'dulæ. Spirit of lavender. Stimulant. Externally as lotion.

Spir'itus limon'is. Spirit of lemon. Used as a flavor.

Spir'itus men'thæ piper'itæ. Spirit of peppermint. Carminative. Dose, ℥ss to ℥j, or 2 to 4 c.c.

Spir'itus men'thæ vir'idis. Spirit of spearmint. Carminative. Dose, ℥ss to f ℥j, or 2 to 4 c.c.

Spir'itus myr'ciæ. Bay rum. External stimulant.

Spir'itus myris'ticæ. Spirit of nutmeg. Used as a flavor.

Spir'itus phos'phori. Spirit of phosphorus. For making the elixir.

Spir'itus vi'ni gal'lici. Spirit of French wine or brandy. Stimulant.

Staphisa'gria. Stavesacre; larkspur seed. Used externally to destroy lice, etc.

Stillin'gia. Queensroot. Alterative. Dose, 5 grs. to ʒss, or 0.325 to 2 gm.

Stramo'nii fo'lia. Stramonium leaves. Narcotic. Dose, 1 to 3 grs., or 0.065 to 0.195 gm.

Stramo'nii se'men. Stramonium seed. Narcotic. Dose, 1 to 3 grs., or 0.065 to 0.195 gm.

Stron'tii bromi'dum. Strontium bromid. The salt formed by the action when hydrobromic acid and strontium carbonate are brought together. Sedative. Dose, 5 to 10 grs., or 0.325 to 0.65 gm.

Stron'tii iod'idum. Strontium iodid. The strontium carbonate with hydriodic acid gives the iodid. Alterative. Dose, 5 to 10 grs., or 0.325 to 0.650 gm.

Stron'tii lac'tas. Strontium lactate. Lactic acid with strontium carbonate yields the lactate. Alterative. Dose, 5 to 10 grs., or 0.325 to 0.65 gm.

Strophan'thus. Strophanthus seed. Heart stimulant. Dose, 1 to 3 grs., or 0.065 to 0.195 gm.

Strychni'na. Strychnine. Insoluble, and therefore little used. The alkaloid from nux vomica seeds.

Strychni'næ sul'phas. Strychnine sulphate. Sulphuric acid and strychnine unite and yield strychnine sulphate. Tonic. Dose, $\frac{1}{60}$ to $\frac{1}{30}$ of a gr., or 0.001 to 0.003 gm.*

Sty'rax. Storax. A resinous substance from a tropical tree. Stimulant. Used in the form of tincture.

Sulphu'ris iod'idum. Sulphur iodid. By melting together sulphur and iodin. Alterative. Dose, 1 to 5 grs., or 0.065 to 0.325 gm.

Sul'phur lo'tum. Washed sulphur.

Sul'phur præcipita'tum. Precipitated sulphur.

Sul'phur sublima'tum. Sublimed sulphur. These three are different forms of the same thing. Alterative. Dose, ʒss to ʒiv, or 2 to 15 gm.

Sum'bul. Sumbul or musk-root. Stimulant. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Supposito'ria. Suppositories. Any substance mixed with melted cocoa butter, run into suitably-shaped molds and cooled. They are formed for insertion into the rectum and the male and female urethra.

Supposito'ria glyceri'ni. Glycerin suppositories.

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*In stating the doses of poisons it is customary to give the largest safe dose. When the case can be watched by the physician, much *larger* doses may be and *are* given. But in *stating* a dose, caution must be observed.

Syru'pus. Syrup. Sugar dissolved in water.

Syru'pus aca'ciæ. Syrup of gum arabic. By mixing mucilage and syrup together. Demulcent. Used as a vehicle.

Syru'pus ac'idi ci'trici. Syrup of citric acid. A mixture of citric acid, essence of lemon, and syrup, designed to take the place of syrup of lemon as a flavor.

Syru'pus ac'idi hydriod'ici. Syrup of hydriodic acid.* Alterative. Dose, 30 to 60 ♏, or 2 to 4 c.c.

Syru'pus al'lii. Syrup of garlic. Expectorant. Dose, f ℥ss to f ℥ij, or 2 to 4 c.c.

Syru'pus al'theæ. Syrup of marshmallow. Sugar is dissolved in an infusion of the root. Used as a vehicle for other things.

Syru'pus amyg'dalæ. Syrup of almond. A mixture of bruised almonds, water and sugar. Used as a vehicle.

Syru'pus auran'tii. Syrup of orange. A mixture of the tincture of orange peel and syrup. Used as a vehicle.

Syru'pus auran'tii flo'rum. Syrup of orange flower. Distilled orange-flower water and sugar.

Syru'pus cal'cii lactophospha'tis. Syrup of lactophosphate of lime. Tonic. Dose, f ℥ss to f ℥ij, or 2 to 4 c.c.

Syru'pus cal'cis. Syrup of lime. Antacid. Dose, f ℥ss to f ℥j, or 2 to 4 c.c.

Syru'pus fer'ri iod'idi. Syrup of ferrous iodid. Tonic; alterative. Dose, 10♏ to ℥j, or 0.650 to 4 c.c.

Syru'pus fer'ri quini'næ et strychni'næ phospha'tum. Syrup of phosphate of iron, quinine, and strychnine. Tonic. Dose, f ℥ss to f ℥j, or 2 to 4 c.c. f ℥j = *about* $\frac{1}{10}$ of a gr. of strychnia.

Syru'pus hypophosphi'tum. Syrup of hypophosphites. Tonic. Dose, f ℥ss to f ℥ij, or 2 to 8 c.c.

Syru'pus ipecacuan'hæ. Syrup of ipecac. Expectorant. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Syru'pus krame'riæ. Syrup of rhatany. The tincture is added to syrup. Astringent. Dose, f ℥ss to f ℥ij, or 2 to 4 c.c.

Syru'pus lactuca'rii. Syrup of lactucarium. From the tincture with syrup. Sedative. Dose, f ℥ss to f ℥ij, or 2 to 4 c.c.

Syru'pus pi'cis liq'uidæ. Syrup of tar. Stimulant. Dose, f ℥ss to f ℥ij, or 2 to 4 c.c.

Syru'pus pru'ni virginia'næ. Syrup of wild cherry bark. Made by adding the infusion to syrup and glycerin. Sedative. Dose, ℥ss to ℥ij, or 2 to 8 c.c.

Syru'pus rhe'i. Syrup of rhubarb. The fluid extract is added to simple syrup. Cathartic. Dose, ℥j to ℥iv, or 4 to 15 c.c.

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*When the ingredients are not further indicated, the title itself serves that purpose. As here, a mixture of the substance named, with syrup.

Syru'pus rhe'i aromat'icus. Aromatic syrup of rhubarb. The tincture is added to simple syrup. Cathartic. Dose, ʒss to ʒiv, or 2 to 15 c.c.

Syru'pus ro'sæ. Syrup of rose. Flavor.

Syru'pus ru'bi. Syrup of blackberry. The fluid extract added to syrup. Astringent. Dose, ʒj to ʒiv, or 4 to 15 c.c.

Syru'pus ru'bi i'dæi. Syrup of raspberry. Used as a flavor.

Syru'pus sarsaparil'læ compos'itus. Compound syrup of sarsaparilla. Fluid extract is added to syrup. Alterative. Dose, ʒj to ʒiv, or 4 to 15 c.c.

Syru'pus scil'læ. Syrup of squill. The vinegar of squill with sugar. Expectorant. Dose, ʒss to ʒj, or 2 to 4 c.c.

Syru'pus scil'læ compos'itus. Compound syrup of squill. Fluid extract of squill, senega, and tartar emetic with syrup. Expectorant. Dose, ʒss to ʒj, or 2 to 4 c.c. One f ʒ = 1 gr. of tartar emetic.

Syru'pus sen'egæ. Syrup of senega. The fluid extract is added to syrup. Expectorant. Dose, ʒss to ʒj, or 2 to 4 c.c.

Syru'pus sen'næ. Syrup of senna. The infusion with sugar and aromatics. Cathartic. Dose, ʒj to ʒiv, or 2 to 15 c.c.

Syru'pus toluta'nus. Syrup of tolu. The tincture with sugar and water. Vehicle for other things.

Syru'pus zingib'eris. Syrup of ginger. The tincture with sugar and water. Carminative. Dose, fʒi to fʒij or 4 to 8 c.c.

T.

Tab'acum. Tobacco leaves. Used chiefly as a poultice.

Tamarin'dus. Tamarind—the pulp. Laxative. Dose, ʒj to ʒiv, or 4 to 15 gm.

Tanace'tum. Tansy—the leaves. Stimulant. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Tarax'acum. Dandelion—the root. Laxative. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Terebe'num. Terebene. A fluid made from turpentine. Expectorant. Dose, 1 to 10 ♏, or 0.065 to 0.65 c.c.

Terebin'thina. Turpentine. An exudation from the pine tree. Used for the preparation of spirit of turpentine.

Terebin'thina canaden'sis. Canada turpentine. Balsam of fir. A natural exudation from a species of fir tree.

Ter'pini hy'dras. Terpene hydrate. A crystalline substance made from turpentine. Expectorant. Dose, 1 to 10 grs., or 0.065 to 0.65 gm.

Thy'mol. Thymol. Obtained from the herb, thyme. Used in antiseptic washes.

Tinctu'ra aconi'ti. Tincture of aconite. Sedative. Dose, 5 to 20 ♏, or 0.325 to 1.30 c.c.

Tinctu'ra al'oes. Tincture of aloes. Cathartic. Dose, ℥j to ℥iv, or 2 to 15 c.c.

Tinctu'ra al'oes et myrrh'æ. Tincture of aloes and myrrh. Stimulant; cathartic. Dose, ℥ss to ℥ij, or 2 to 8 c.c.

Tinctu'ra ar'nicæ flo'rum. Tincture of arnica flowers. Used externally for bruises, etc.

Tinctu'ra ar'nicæ ra'dicis. Tincture of arnica root. Stimulant. Dose, 10 to 30 ♏, or 0.65 to 2 c.c.

Tinctu'ra asafœ'tidæ. Tincture of asafetida. Nervine. Dose, f ℥j to f ℥ij, or 4 to 8 c.c.

Tinctu'ra auran'tii arma'ri. Tincture of bitter orange. Used as a flavor.

Tinctu'ra auran'tii dul'cis. Tincture of sweet orange-peel. Used for flavoring purposes.

Tinctu'ra belladon'næ folio'rum. Tincture of belladonna leaves. Narcotic; antispasmodic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Tinctu'ra benzoin'i. Tincture of benzoin. Stimulant. Dose, 10 to 30 ♏, or 0.65 to 2 c.c.

Tinctu'ra benzoin'i compos'ita. Compound tincture of benzoin. Stimulant. Dose, 15 to 60 ♏, or 2 to 4 c.c.

Tinctu'ra bryo'niæ. Tincture of bryony. Cathartic. Dose, ℥j to ℥ij, or 4 to 8 c.c.

Tinctu'ra calen'dulæ. Tincture of calendula. Stimulant. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Tinctura calum'bæ. Tincture of calumba. Tonic. Dose, 10 ♏ to ℥j, or 0.65 to 4 c.c.

Tinctu'ra can'nabis in'dicæ. Tincture of cannabis. Narcotic. Dose, 5 to 20 ♏, or 0.325 to 2 c.c.

Tinctu'ra canthar'idis. Tincture of cantharides. Vesicant. Used externally. Uterine stimulant. Dose, 1 to 10 ♏, or 0.065 to 0.65 c.c.

Tinctu'ra cap'sici. Tincture of capsicum. Stimulant. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Tinctu'ra cardamo'mi. Tincture of cardamom. Carminative. Dose, ℥ss to ℥j, or 2 to 4 c.c.

Tinctu'ra cardamo'mi compos'ita. Compound tincture of cardamom. Carminative. Dose, f ℥j to f ℥ij, or 4 to 8 c.c.

Tinctu'ra cat'echu compos'ita. Compound tincture of catechu. Astringent. Dose, ℥ss, to ℥ij, or 2 to 8 c.c.

Tinctu'ra chira'tæ. Tincture of chiretta. Tonic. Dose, 30 ♏ to ℥ij, or 2 to 8 c.c.

Tinctu'ra cimicif'ugæ. Tincture of cimicifuga. Alterative. Dose, 60 ♏ to f ℥ij, or 4 to 8 c.c.

Tinctu'ra cincho'næ. Tincture of cinchona. Tonic. Dose, ℥ss to ℥ij, or 2 to 8 c.c.

Tinctu'ra cincho'næ compos'itæ. Compound tincture of cinchona. Bitter tonic. Dose, ʒj to ʒij, or 4 to 8 c.c.

Tinctu'ra cinnamo'mi. Tincture of cinnamon. Stimulant. Dose, ʒss to ʒj, or 2 to 4 c.c.

Tinctu'ra col'chici sem'inis. Tincture of colchicum seed. Alterative. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Tinctu'ra cro'ci. Tincture of saffron. Emmenagogue. Dose, ʒss to ʒij, or 2 to 8 c.c.

Tinctu'ra cube'bæ. Tincture of cubeb. Stimulant; expectorant. Dose, ʒss to ʒij, or 2 to 8 c.c.

Tinctu'ra digita'lis. Tincture of digitalis. Heart stimulant. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Tinctu'ra herba'rum recen'tium. Tincture of fresh herbs. There are none official. The typical formula is ten parts of drug to 100 parts of strong alcohol. They are used to supersede the homeopathic mother tinctures.

Tinctu'ra fer'ri chlo'ridi. Tincture of chlorid of iron. Tincture of sesqui-chlorid of iron. Tonic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Tinctu'ra gal'læ. Tincture of nutgall. Astringent. Dose, ʒss to ʒj, or 2 to 4 c.c.

Tinctu'ra gelsem'ii. Tincture of gelsemium. Antispasmodic. Dose, 5 to 15 ♏, or 0.325 to 1 c.c.

Tinctu'ra gentia'næ compos'ita. Compound tincture of gentian. Tonic. Dose, ʒss to ʒij, or 2 to 8 c.c.

Tinctu'ra guaia'ci. Tincture of guaiac. Stimulant. Dose, ʒss to ʒj, or 2 to 4 c.c.

Tinctu'ra guaia'ci ammonia'ta. Ammoniated tincture of guaiacum. Stimulant. Dose, ʒss to ʒj, or 2 to 4 c.c.

Tinctu'ra hu'muli. Tincture of hops. Sedative. Dose, ʒj to ʒiv, or 4 to 15 c.c.

Tinctu'ra hydras'tis. Tincture of golden seal. Tonic; cathartic. Dose, 30 ♏ to ʒj, or 2 to 4 c.c.

Tinctu'ra hyoscy'ami. Tincture of hyoscyamus. Tincture of henbane. Hypnotic. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Tinctu'ra io'di. Tincture of iodin. Used externally.

Tinctu'ra ipecacuan'hæ et o'pii. Tincture of ipecac and opium. Anodyne; diaphoretic. Dose, 1 to 10 ♏, or 0.065 to 0.65 c.c.

Tinctu'ra ki'no. Tincture of kino. Astringent. Dose, ʒss to ʒij, or 2 to 8 c.c.

Tinctu'ra krame'riæ. Tincture of rhatany. Astringent. Dose, ʒss to ʒij, or 2 to 8 c.c.

Tinctu'ra lactuca'rii. Tincture of lactucarium. Sedative. Dose, 10 to 60 ♏, or 0.65 to 4 c.c.

Tinctu'ra lavan'duiæ compos'ita. Compound tincture of lavender. Stimulant. Dose, f ʒss to f ʒij, or 2 to 8 c.c.

Tinctu'ra lobe'liæ. Tincture of lobelia. Emetic. Dose, 10 to 60 ♏, or 0.65 to 4 c.c.

Tinctu'ra mat'ico. Tincture of matico. Urethral stimulant. Dose, ℥ss to ℥ij, or 2 to 8 c.c.

Tinctu'ra mos'chi. Tincture of musk. Antispasmodic. Dose, ℥ss to ℥ij, or 2 to 8 c.c.

Tinctu'ra myrr'hæ. Tincture of myrrh. Stimulant. Dose, 10 to 60 ♏, or 0.65 to 4 c.c.

Tinctu'ra nu'cis vom'icæ. Tincture of nux vomica. Tonic. Dose, 5 to 20 ♏, or 0.325 to 1.3 c.c.

Tinctu'ra o'pii. Tincture of opium. Narcotic. Dose, 10 ♏, or 0.65 c.c., equaling 1 gr., or 0.065 gm. of opium.

Tinctu'ra o'pii camphora'ta. Paregoric; camphorated tincture of opium. Sedative. Dose, 10 ♏ to ℥j, or 0.65 to 4 c.c; ℥j, or 4 c.c. = ¼ gr. or 0.016 gm. of opium.

Tinctu'ra o'pii deodora'ti. Deodorized tincture of opium. Narcotic. Dose, 10 ♏, or 0.65 c.c.

Tinctu'ra physostigma'tis. Tincture of physostigma. Sedative. Dose, 5 to 10 ♏, or 0.325 to 0.65 c.c.

Tinctu'ra pyre'thri. Tincture pellitory. Sialagogue. Used chiefly externally.

Tinctu'ra quas'siæ. Tincture of quassia. Tonic. Dose, ℥ss to ℥ij, or 2 to 8 c.c.

Tinctu'ra quilla'jæ. Tincture of quillaja or soap bark. Stimulant. Dose, 10 to 30 ♏, or 0.65 to 2 c.c.

Tinctu'ra rhe'i. Tincture of rhubarb. Cathartic. Dose, ℥j to ℥iv, or 4 to 15 c.c.

Tinctu'ra rhe'i aroma'tica. Aromatic tincture of rhubarb. Cathartic. Dose, ℥j to ℥iv, or 4 to 15 c.c.

Tinctu'ra rhe'i dul'cis. Sweet tincture of rhubarb. Cathartic. Dose, ℥j to ℥iv, or 4 to 15 c.c.

Tinctu'ra sanguina'riæ. Tincture of blood-root. Expectorant. Dose, 10 to 30 ♏, or 0.65 to 2 c.c.

Tinctu'ra scil'læ. Tincture of squill. Emetic; expectorant. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Tinctu'ra serpenta'riæ. Tincture of Virginia snakeroot. Alterative. Dose, ℥ss to ℥ij, or 2 to 8 c.c.

Tinctu'ra stramo'nii sem'inis. Tincture of stramonium seed. Narcotic. Dose, 5 to 10 ♏, or 0.325 to 0.65 c.c.

Tinctu'ra strophan'thi. Tincture of strophanthus. Stimulant. Dose, 1 to 10 ♏, or 0.065 to 0.65 c.c.

Tinctu'ra sumbul. Tincture of sumbul. Antispasmodic. Dose, 10 to 60 ♏, or 0.65 to 4 c.c.

Tinctu'ra toluta'na. Tincture of tolu. Used chiefly as an aromatic.

Tinctu'ra valeria'næ. Tincture of valerian. Stimulant. Dose, f ʒss to f ʒij, or 2 to 8 c.c.

Tinctu'ra valeria'næ ammonia'ta. Ammoniated tincture of valerian. Stimulant. Dose, ʒss to ʒij, or 2 to 8 c.c.

Tinctu'ra vanil'læ. Tincture of vanilla. Used as a flavor for other medicines.

Tinctu'ra vera'trum vi'ridis. Tincture of veratrum viride. Sedative. Dose, 1 to 5 ♏, or 0.065 to 0.325 c.c.

Tinctu'ra zingib'eris. Tincture of ginger. Stimulant. Dose, 10 to 60 ♏, or 0.65 to 4 c.c.

Tragacan'tha. Tragacanth. A gum used for preparing demulcent drinks.

Trit'icum. Couch-grass. Diuretic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Trituratio'nes. Triturations. Powders, prepared by rubbing in a mortar nine parts of sugar of milk with one part of medicinal substance.

Tritura'tio elateri'ni. Trituration of elaterin. Cathartic. Dose, ½ gr., or 0.033 gm.

Trochis'ci ac'idi tan'nici. Tannic acid troches. Astringent in throat troubles.

Trochis'ci ammo'nii chlo'ridi. Chlorid of ammonium troches. Stimulant in throat and lung troubles.

Trochis'ci cat'echu. Catechu troches. Astringent.

Trochis'ci cre'tæ. Chalk troches. Antacid.

Trochis'ci cube'bæ. Cubeb troches. Expectorant.

Trochis'ci fer'ri. Iron troches. Tonic.

Trochis'ci glycyrrhi'zæ et o'pii. Licorice and opium troches. Sedative; expectorant. Each contains $\frac{1}{10}$ of a grain of opium.

Trochis'ci ipecacuan'hæ. Ipecac troches. Expectorant.

Trochis'ci krame'riæ. Krameria troches. Astringent.

Trochis'ci men'thæ piperi'tæ. Peppermint troches. Carminative.

Trochis'ci morphi'næ et ipecacuan'hæ. Morphin and ipecac troches. Anodyne; expectorant. Each contains $\frac{1}{12}$ of a grain of morphin.

Trochis'ci potas'sii chlora'tis. Potassium chlorate troches. Antiseptic in throat troubles.

Trochis'ci santoni'ni. Santonin troches. Vermifuge.

Trochis'ci so'dii bicarbona'tis. Sodium bicarbonate troches. Antacid.

Trochis'ci zingib'eris. Ginger troches. Carminative.

U.

Ul'mus. Elm-bark. Used for demulcent drink.

Unguen'tum. Ointment. Lard and yellow wax.

Unguen'tum ac'idi carbol'ici. Carbolic acid ointment. Three per cent. of carbolic acid with ointment.

Unguen'tum ac'idi tan'nici. Tannic acid ointment. Twenty per cent. of tannic acid.

Unguen'tum a'quæ ro'sæ. Rose-water ointment, or cold cream. White wax, spermaceti, oil of almonds, rose-water, and borax.

Unguen'tum belladon'næ. Belladonna ointment. Ten per cent. of extract of belladonna.

Unguen'tum chrysaro'bini. Chrysarobin ointment. Six per cent. of chrysarobin.

Unguen'tum diach'ylon. Diachylon ointment. Lead plaster, olive oil, and oil of lavender.

Unguen'tum gal'læ. Nutgall ointment. Twenty per cent. of powdered nutgalls.

Unguen'tum hydrar'gyri. Mercurial or blue ointment. Mercury, mercury oleate, lard, and suet. Fifty per cent. of mercury.

Unguen'tum hydrar'gyri ammonia'ti. Ammoniated mercury ointment. Ten per cent. of ammoniated mercury.

Unguen'tum hydrar'gyri nitra'tis. Nitrate of mercury ointment. Mercury, nitric acid, lard oil.

Unguen'tum hydrar'gyri ox'idi fla'vi. Yellow oxid of mercury ointment. Ten per cent. of yellow oxid of mercury.

Unguen'tum hydrar'gyri ox'idi ru'bri. Red oxid of mercury ointment. Ten per cent. of red oxide of mercury.

Unguen'tum io'di. Iodin ointment. Four per cent. of iodin, one per cent. of potassium iodid.

Unguen'tum iodofor'mi. Iodoform ointment. Ten per cent. iodoform.

Unguen'tum pi'cis liq'uidæ. Tar ointment. Fifty per cent. of tar.

Unguen'tum plum'bi car'bonatis. Carbonate of lead ointment. Ten per cent. of lead carbonate.

Unguen'tum plum'bi iod'idi. Lead iodid ointment. Ten per cent. of lead iodid.

Unguen'tum potas'sii iod'idi. Potassium iodid ointment. Ten per cent. of potassium iodid.

Unguen'tum stramo'nii. Stramonium ointment. Ten per cent. of the extract of stramonium.

Unguen'tum sulphu'ris. Sulphur ointment. Fifteen per cent. of sulphur.

Unguen'tum veratri'næ. Veratrine ointment. Four per cent. of veratrine.

Unguen'tum zin'ci ox'idi. Zinc oxid ointment. Twenty per cent. of zinc oxid.

U'va ur'si. Bearberry leaves. Diuretic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

V.

Valeria'na. Valerian root. Nerve stimulant. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Vanil'la. Vanilla bean. Flavor.

Veratri'na. Veratrine. An alkaloid from sabadilla seed. Heart depressant. Dose, $\frac{1}{10}$ to $\frac{1}{10}$ of a grain, or 0.002 to 0.006 gm.

Vera'trum vi'ride. American hellebore root. Depressant. Dose, 1 to 3 grs., or 0.065 to 0.195 gm.

Vibur'num op'ulus. Cramp-bark. Stimulant. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Vibur'num prunifo'lium. Black haw. Tonic; diuretic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Vi'num al'bum. Sherry-wine. The fermented juice of the grape-pulp.

Vi'num antimo'nii. Wine of antimony. Expectorant. Dose, 10 to 30 ♏, or 0.65 to 2 c.c.

Vi'num colchi'ci ra'dicis. Wine of colchicum root. Alterative in rheumatism. Dose, 5 to 15 ♏, or 0.325 to 1 c.c.

Vi'num colchi'ci sem'inis. Wine of colchicum seed. Alterative. Dose, 5 to 30 ♏, or 0.325 to 2 c.c.

Vi'num ergo'tæ. Wine of ergot. Uterine stimulant. Dose, ℥j to ℥iij, or 4 to 12 c.c.

Vi'num fer'ri ama'rum. Bitter wine of iron. Tonic. Dose, ℥j to ℥ij, or 4 to 8 c.c.

Vi'num fer'ri citra'tis. Wine of iron. Hematic. Dose, ℥j to ℥ij, or 4 to 8 c.c.

Vi'num ipecacuan'hæ. Wine of ipecac. Emetic. Dose, ℥ss to ℥ij, or 2 to 8 c.c.

Vi'num o'pii. Wine of opium. Narcotic. Dose, 10 ♏, or 0.65 c.c., equaling 1 gr., or 0.065 gm.

Vi'num ru'brum. Red wine. Fermented juice of grape-pulp and skin.

Vitel'lus. Yolk of egg. Used to form emulsions with oils.

X.

Xanthox'ylum. Prickly ash bark. Stimulant. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Z.

Ze'a. Corn-silk. Diuretic. Dose, 5 to 30 grs., or 0.325 to 2 gm.

Zin'ci ac'etas. Zinc acetate. Formed by acting upon zinc with acetic acid. Astringent. Dose, ½ to 2 grs., or 0.033 to 0.13 gm.

Zin'ci bromi'dum. Zinc bromid. By combining zinc oxid with hydrobromic acid. Sedative. Dose, 1 to 2 grs., or 0.065 to 0.13 gm.

Zin'ci car'bonas præcipita'tus. Precipitated zinc carbonate. By reaction between zinc sulphate and sodium carbonate. Used externally as ointment.

Zin'ci chlo'ridum. Zinc chlorid. By acting upon zinc with hydrochloric acid. Used as an escharotic.

Zin'ci iod'idum. Zinc iodid. Alterative. Dose, ½ to 2 grs., or 0.033 to 0.13 gm.

Zin'ci ox'idum. Zinc oxid. By burning zinc. External; astringent.

Zin'ci phos'phidum. Zinc phosphid. Nerve-tonic. Dose, $\frac{1}{16}$ to ½ grain, or 0.004 to 0.033 gm.

Zin'ci sul'phas. Zinc sulphate. Astringent. Dose, 1 to 3 grs., or 0.065 to 0.195 gm. Emetic. Dose, 10 to 60 grs., or 0.65 to 4 gm.

Zin'ci valeria'nas. Zinc valerianate. Nerve-tonic. Dose, ½ to 2 grs., or 0.033 to 0.13 gm.

Zin'cum. Zinc. For preparing zinc salts.

Zin'giber. Ginger root. Stimulant. Dose, 5 to 30 grs., or 0.325 to 2 gm.

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